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"I cannot help plead to my countrymen, at every opportunity, to cherish all that is manly and noble in the military profession, because Peace is enervating and no man is wise enough to foretell when soldiers may be in demand again."—GENERAL SHERMAN.

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Seaman Prize Essay.

MILITARY HYGIENE: HOW BEST TO ENFORCE ITS
STUDY IN OUR MILITARY AND NAVAL SCHOOLS
AND PROMOTE ITS INTELLIGENT PRACTICE IN
OUR ARMY.

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HYGIENE considered with special reference to preserving the health of the soldier, is called military hygiene, whereas, that hygiene which applies the principles to the "conditions peculiar to life at sea and especially as existing in ships of war" is called naval hygiene.

At times the soldier serves aboard ship, as in transports, and at times the sailor serves ashore; it consequently becomes necessary for the soldier to know something of the special application of the principles of hygiene to life on ship board, and for the sailor to know something about the special application of these same principles to life in camp.

Since the term *military* has been legally construed to apply at times equally to both the army and the navy, we shall assume that the expression *military hygiene* applies equally to the hygiene of the soldier and the hygiene of the sailor, remembering, however, that when we speak of instruction in military hygiene in army schools we mean that instruction to deal more particularly with the peculiar conditions surrounding the life

of the soldier; and that when we speak of instruction in military hygiene in naval schools we mean that instruction to deal more particularly with the peculiar conditions surrounding the life of the sailor.

The curriculum of our national military and naval schools, prescribed by those in authority, is the result of experience and necessity—it is a growth gradually attained. Since this curriculum is considered best adapted to the special needs of the respective institutions, it begets a conservatism that is opposed to any change unless the urgent necessity for such change is imperatively apparent.

The military and naval schools in our country at present *enforcing the study* of military hygiene are the Army Medical School, the Navy Medical School, the Infantry and Cavalry School, and, under General Orders 115, at each military post, the garrison school where the youngest officers of our army will be expected to devote ten hours of their lifelong career to recitations upon their ever present duty of preserving the health of their men.

In institutions like the Military Academy at West Point and the Naval Academy at Annapolis, when courses of study are *prescribed* they are enforced by text-books, recitations, markings, examinations to determine proficiency, penalties in case of deficiency, assignment of a certain number to the subject to serve as a standard in helping to fix graduation standing.

In these institutions a mere course of lectures on military hygiene, without text-books, recitations, markings, examinations, penalties, or assigned number as a standard, cannot be considered as an *enforcement of the study* of that subject. Such a course looks more like a concession to preserve from without than like a prescription deemed necessary to fulfil the objects and aims for which those institutions were founded.

We do not deem the Army and Navy Medical Schools as coming under the first subdivision of our theme because we believe that this portion of the subject under discussion is intended to deal with enforcing the study of military hygiene in those schools where are educated young men who are destined, in great part, to command our soldiers and our sailors, in peace and in war. These two service medical schools, however, play an important part in promoting the intelligent practice of military hygiene; we shall therefore, treat of the

Army Medical School when we discuss the second subdivision of our theme.

The absolute necessity for the systematic instruction and education in military hygiene, of the army and navy officer while they are still undergraduates, has not yet been fully conceded by the authorities at the military and the naval academies nor by the War and the Navy Departments; nor have the latter authorities conceded the great necessity for officers of all grades to have a knowledge of this subject other than what they have gained by sad experience in the past, or what they may gain by equally sad experience in the future.

Before we show how to enforce the study of military hygiene in our military and naval schools, we deem it of great importance to bring out clearly the urgent need of this study on the part, not only of the undergraduates in those schools, but also of every line officer, of whatever grade.

No one single element of all those that make for efficiency has a greater influence on the success of an army in the field than *health*. "Health," says Napoleon, "is indispensable in war, and cannot be replaced by anything."

Thirty-three years elapsed between the close of our civil war and the beginning of our war with Spain. No country in the world, no officers of any army, had greater opportunity than had the United States and the officers of its army, to become thoroughly familiar with the causes of ill health on the part of troops in the field and the means to counteract them. In no equal preceding period had military hygiene made greater strides than in the latter half of the nineteenth century; and yet, at the conclusion of the Spanish-American War, what was the verdict of history? Listen to the then Secretary of War: . . . "During the war, typhoid fever occurred in every camp in the United States; typhoid fever became epidemic in every camp, state or national; more than 90 per cent. of the volunteer regiments developed this disease within eight weeks after their enrollment, and the deaths from this camp scourge alone amounted to more than 80 per cent. of the total deaths from disease. With this statement of facts the question arises. What was the cause? The answer is simple and of easy demonstration. Generally described, the cause of the sickness was *camp pollution*; specifically, the cause was due to ignorance or neglect on the part of officers coupled with the inexperience of the newly enlisted soldiers." . . . And again: "The

evidence is overwhelming that the sickness among the soldiers encamped in the United States during the summer of 1898 was the result of *ignorance, inexperience and carelessness* on the part of both officers and men. The fact that typhoid fever was prevalent in every camp, whether of 1000 or 50,000 men, indicates what other indisputable evidence conclusively demonstrates."

It did not need the war with Spain to demonstrate the fact that a clean camp and the observance of a few common-sense, hygienic laws, will prevent much sickness, but it does seem to have needed the war with Spain and the experience of camp life gained therein, to demonstrate to the officers of the line of the army that upon their shoulders *finally* rested the grave responsibility of preserving the health of their men.

With an efficient and accomplished Medical Department and an efficient and well-equipped Hospital Corps it will seem to the outsider that this is too broad a statement to be true; but to those who know and understand the peculiar status as regards control and command that hampers the Medical Department in preventing preventable diseases, the truth of the assertion is only too real.

Of what avail are the recommendations and injunctions of a medical adviser for preserving the health of an army in the field if those recommendations and injunctions be set aside by the military commander, or if they be merely perfunctorily issued in orders and not strictly enforced in spirit and to the letter? Look over the records of the Medical Department of Army, Corps, Division and Brigade Headquarters in the United States, in Cuba, in Porto Rico, in China, in the Philippine Islands, and you will find that the recommendations made and the suggestions given to the commanders of troops by officers of the Medical Department, U. S. Army, from the surgeon-general down, were in the forefront of scientific research and advance made by medicine and military hygiene.

The principles of our military system are firmly established, and they limit the medical officer's duty to *advice* for the prevention of disease, but *control* when the sick man is actually present in hospital. Even in the latter case, commanding officers have been known to interfere with the surgeon's prerogative, yet the principle of non-interference is so well established that we can consider it as fixed. *Advice*, when it is a

question of military hygiene; and *control*, when it is a question of medicine:

But, hygiene is greater than medicine—it is better and *easier* to avoid injury to our priceless possession, health, than it is to cure disease.

What is it that has brought down the death rate in our cities to nineteen and even eighteen per thousand? *The sanitary precautions* taken by the medical profession and enforced by the civil authorities. Just imagine what would be the conditions of New York City and the rate of mortality amongst its 3,500,000 inhabitants if there did not exist the almost perfect sewerage and water systems!

The greatest work of the Americans in Cuba is to have brought down the annual death rate from thirty-four to twenty-one per thousand, thereby saving to the city of Havana alone, 40,000 lives annually. How was this accomplished? *By the sanitary precautions* taken by the medical profession of the army and enforced by the military authorities.

The Germans are admitted to be the greatest sanitarians in the world. For the thirty years preceding 1900 they had 13,000 deaths, whereas the French, in the same time, had 99,000 deaths. On the German side in the Franco-German War, the deaths from disease were as one to two from wounds, the only record of its kind in the history of the world. In the German Army and nation vaccination is compulsory; by this simple measure not a single case of small pox occurred amongst the German troops, whereas there was a perfect epidemic amongst the French, who lost thousands from this cause alone. Again, typhoid fever, the greatest scourge of armies in camp, killed five or six Frenchmen to one German. What was the cause of this discrepancy between the mortality of the two armies?

The causes were several, but they all come under military hygiene. First, the poor sanitary surroundings of the French soldier; second, poor drinking water; third, over-crowded quarters; fourth, poor food; fifth, the fact that with a population of 38,000,000 France maintains as large a standing army as Germany with a population of 50,000,000, with the result that Germany can afford to select her recruits, rejecting the weak, the poorly developed and the infirm, whereas France must take *all*, and many of her soldiers, breaking down under

the strain, become proper propagating grounds for the development and spread of disease.

Yes—there is no doubt about it—everything proves that hygiene is greater than medicine; for while medicine cures hundreds, hygiene saves tens of thousands of lives. These are facts which will enable us to view, in their proper light, the principles that govern in our army: When it is a question of prescribing medicines and otherwise caring for the sick, we give the doctor full control and power to act; but when it becomes a broader question of military hygiene and the preservation of the health of the whole army, we take from the doctor control and reduce his rôle to that of adviser, leaving the final responsibility with the officer commanding the troops.

Woe to the line officer, one would think, who failed to carry out to the letter and in the spirit intended, the plain precepts of his medical adviser. Yet, does one ever hear of a line officer's being tried for tolerating camp pollution and for making not only possible, but absolutely certain, the deaths of from three to ten men from disease—preventable disease—to one from bullets?

Is it not remarkable that, in spite of the experience of the Civil War, in spite of the experience of the Spanish-American War, in spite of the experience of every war and every campaign fought and conducted since the dawn of history—is it not remarkable that there should be no adequate provision for the systematic instruction and training of the line officer in this, the most important of his duties—the preservation of the health of his command? We repeat the maxim of Napoleon, that keen observer, based upon his own wars and those of Alexander, Hannibal, Cæsar, Gustavus Adolphus, Turenne Eugene, and Frederick: "Health is indispensable in war and cannot be replaced by anything." A maxim that every military student has probably seen, possibly committed to memory, but which he will seldom put into practice until the decimation of his own or some other command teaches him to appreciate its value. Why do we permit history to repeat itself to the disgraceful extent that occurred in the Spanish-American War, one dead in battle to seven and one-half from disease? Why do we remain blind to the remedy? The Medical Department of the United States Army would be only too glad to assume the full responsibility, not only for the cure but also for the prevention of preventable disease; since custom and usage has,

however, prohibited this to them, let us hasten to see to it that the line officer of the army, in whom we have reposed the final responsibility, shall, by education and experience, prepare himself to meet properly that serious responsibility.

Ignorance, inexperience and carelessness, were the causes of the spread of preventable disease during the Spanish-American War.

If line officers and enlisted men had an abiding faith in the recommendations, suggestions and injunctions of medical officers, nothing more would be necessary than for the doctor's directions to be formally promulgated in orders to the troops. But the sad story of preventable disease in war shows that until reinforced by the grim reaper, death, promulgated prophylactic measures are in the main treated lightly, if not with contempt, by those whom they are intended to benefit—not only by the enlisted men, but frequently on the part of subordinate commissioned officers, and sometimes, we regret to say, by commanding officers themselves.

What is the remedy? Discipline? Discipline is a great remedy for carelessness, and is of great effect when the malefactor is caught, but in nine cases out of ten, when the malefactor is caught the damage has already been done, not only to himself, which would be bad enough, but also to his comrades, which, since it affects the efficiency of the command, makes the case very grave. A remedy that requires the constant exercise of disciplinary measures is sometimes the only one to apply with careless or vicious men, but it is a remedy that to be successful, must be coupled with individual moral discipline and responsibility, and this means education and instruction. The sovereign remedy is the *education* of officers and men in common sense hygienic principles; their *instruction* in the application of these principles to the conditions of military life in the field, and the *experience* of all concerned by actual living in the field under service conditions. Discipline will partly remedy carelessness and viciousness, but only by education, instruction and experience can we hope to establish individual moral responsibility and eliminate ignorance and inexperience. Until we do this, and until every other army in the world does likewise, history will repeat itself, and three to ten deaths from preventable disease will remain the constantly recurring curse of army life in warfare.

After the experiences of the summer and fall of 1898 in our

numerous camps; after the disgraceful record we made from May 1st to September 30th, 345 officers and men dead of bullets to 2565 dead of disease, mainly preventable disease; after the thorough arousing of the country, and of the officers and men of the army to the necessity for living in camp in conformity to hygienic principles as enunciated by our doctors, have we anything to show as a beneficial result of discipline, education, instruction, and experience? Have we anything to show the truth of our statement concerning the means to adopt, in order to eradicate in camp life death from preventable disease?

We quote only one instance. A camp was established in Cuba and lasted from January to June, 1899. Six regiments, four volunteer and two regular, were encamped therein; two volunteer regiments for two months, two volunteer regiments for four months, two regular regiments for four and five months. In all that time, almost six months, *and in Cuba, there was only one death and that by drowning.*

Of what avail is it to a commanding general in the field if he have a perfectly organized staff, sufficient food of good quality, ample and suitable clothing and transportation, a liberal supply of ammunition, perfect armament, great numbers, fine *esprit de corps*—of what avail are all these if his army be flat on its back from preventable disease? With every possible element in its favor except the element of good health, that command is doomed.

"No man," says Lord Wolseley, "can be a truly great general who is ignorant of the great laws upon which sanitary science is based." We would, with His Lordship's permission, extend this conclusion and say: "No lieutenant can be a truly efficient lieutenant, no captain a truly efficient captain, no major, lieutenant-colonel nor colonel, a truly efficient field officer, no general a truly great general, who is ignorant of the laws upon which sanitary science is based or who is ignorant of the principles underlying military hygiene." Sanitation, it will be recalled, is that subdivision of hygiene which prevents the transmission of pathogenic germs—germs that cause diseases from without—infectious diseases—preventable diseases, whereas military hygiene deals with all measures that tend to preserve and improve the health of troops, and includes such subjects as recruiting, clothing, food, drink, marching, camping, habitations, water, sewerage, etc.

We venture to say that the proportion of field and general officers in our army, outside of the Medical Corps, before the outbreak of the war with Spain, who understood the great laws upon which sanitary science is based and who understood the application of the principles underlying military hygiene, was infinitesimally small; their education in that respect while they were lieutenants and captains had been woefully neglected. What a ghastly smile must light up the features of those lieutenants and captains who, in 1898, and the three following years, had the good fortune to hold field officers' commissions in the volunteers! What a ghastly smile when they look back upon the responsibility that they assumed, and the lack of education, instruction and experience in camp sanitation and care of the health of men in the field that they brought with them to fulfil the responsibility!

We believe we have said enough to show that since to the general and to the line officer belongs the final responsibility for keeping an army off its back from preventable disease, the subject of military hygiene should form part of the education and instruction of all officers placed in command of troops, and it should form one of the subjects for examination in the promotion of all line officers in increasing and broader scope as the grade of the officer increases.

Those officers of the army who come from West Point, and the officers of the navy who come from Annapolis, should be taught the great laws of sanitary science and the principles of military hygiene before they graduate. After leaving the National academies they should be instructed in the practical application of those laws and principles to the peculiar conditions surrounding the soldier and the sailor in peace and war; and finally, this practical application should be supplemented by actual experience with troops in the field and aboard ship, under conditions approaching as nearly as possible those of actual warfare. How best shall the study of military hygiene be enforced in our military and naval schools?

Our military and naval schools consist: First, undergraduate schools; second, postgraduate schools.

The undergraduate schools comprise: First, the United States Military Academy at West Point and the United States Naval Academy at Annapolis; second, those educational institutions within the meaning of Section 1225, Revised Statutes and of the acts amendatory thereof, to which officers of the

army and navy to the number of 110, may be detailed as professors of military science and tactics; third, State schools giving military education and training, but not comprised in second.

The post graduate schools comprise: First, the Garrison School for Officers; second, the special service schools; third, the Staff College; fourth, the Army War College and the Navy War College. The special service schools comprise: (a) the Infantry and Cavalry School at Fort Leavenworth, Kansas; (b) the School of Application for Cavalry and Field Artillery at Fort Riley, Kansas; (c) the Artillery School at Fortress Monroe, Virginia; (d) the Engineer School at Washington Barracks, D. C.; (e) the School of Submarine Defense, Fort Totten, N. Y.; (f) the Army Medical School and the Navy Medical School at Washington, D. C.; (g) the Signal School at Fort Leavenworth, Kansas.

THE UNITED STATES MILITARY ACADEMY AT WEST POINT.

Candidates for admission to the Military Academy must be able to pass a satisfactory examination in the general principles of physiology and hygiene, with special reference to the nature and the effects of alcoholic drinks and other narcotics upon the human system.

A course of five lessons in Tracy's "Anatomy, Physiology, and Hygiene," is given to the second class as a part of the course in chemistry, mineralogy and geology.

Paragraph 66, Regulations United States Military Academy, 1902, says: "Military hygiene: The second class shall receive instruction by lecture in this branch during the months of April and May, according to arrangement in drawing."

Paragraph 45, says: "Allotment of time: Lectures on military hygiene 2-3 P. M. Half of the second class every week day during the months of April and May, and alternating with drawing."

These two paragraphs of the United States Military Academy Regulations, mean that during the months of April and May, cadets of the second class attend *about* twenty lectures of one hour each, in military hygiene. These lectures are delivered by the surgeon to one-half of the class one day and the same lecture to the other half on the following day. (Appendix "A" shows the scope of these lectures given in April and May, 1904.)

The cadets are not required to take notes, nor are they marked, nor does the subject count for anything on graduation standing; they simply sit there and listen attentively to the interesting talks given them on the various subjects selected by the surgeon, who, in order to stimulate the cadets to pay attention, questions a few of them at the next lecture on the subject-matter of the preceding lecture. By their answers some cadets show they have learned something, others show that they did not pay attention to the lecturer, or had already forgotten the main points of the subject.

We have given this résumé to show the present status of instruction in military hygiene at West Point, and to enable the reader to understand how we would *enforce the proper study* of this subject at the Military Academy. There seems to be a misapprehension, even on the part of some in authority, as to who has the power to prescribe a course of study at West Point; the practice is, however, perfectly plain on the subject. We quote from Davis's "Military Law of the United States," page 554, footnote: "The course of study at the Military Academy is fixed, in part by the statutes creating the several departments of instruction, and other enactments of Congress, and in part by executive regulation." This is important since it shows definitely the only ways that the study of military hygiene can be enforced at West Point. Let us look at these ways a little more closely.

1. By the statutes creating the several departments: The offices of Professor of Civil and Military Engineering, of Professor of Natural and Experimental Philosophy, of Professor of Mathematics, of Professor of Chemistry, Mineralogy and Geology, of Professor of Law, and of Instructor of Practical Military Engineering, were all established *directly* by acts of Congress at varying intervals of time from 1802-1874.

2. By other enactments of Congress: Secs. 1, 2, Act of May 20, 1886 (24 Stat. L., 69), prescribe the present study of "the nature of alcoholic drinks and narcotics and special instruction as to their effects upon the human system." (See Appendix "B.")

3. By executive regulation or order later confirmed by act of Congress: The office of Teacher of Drawing, first created by executive order, received statutory recognition in Sec. 2, of Act of April 29, 1802; the office of Professor of Drawing was established by Sec. 3, Act of August 8, 1846. The office of

teacher of French, first established by executive regulation, received statutory recognition in Sec. 2, of the Act of April 29, 1802. This office became, in 1846, by act of Congress, that of Professor of French, and later, in 1879, by Act of Congress again, it became the office of Professor of Modern Languages.

4. *By Executive Regulation alone:* The office of Instructor of Ordnance and Gunnery was established by *the Secretary of War* on the recommendation of the Academic Board, on December 31, 1856.

The practice of over 100 years shows us, then, that in order to enforce a new study at West Point, there must be a direct Act of Congress establishing it, *or* an executive order or regulation establishing it. In other words, Congress must act *or* the President, through the Secretary of War, must act.

If the Secretary of War (acting, of course, for the President) has the power to establish a new course of study at West Point, there is no necessity for having recourse to Congress to have such a new course of study established by special act. We know and we have shown that the President has this power, and that on three separate and distinct occasions in the history of West Point, he has exercised this power to establish a new course of study, viz.: in the cases of the departments of Drawing, French, Ordnance, and Gunnery.

Therefore, to best enforce the study of military hygiene at West Point, the Secretary of War, acting for the President, should establish, by executive regulation, the office of "Instructor of Military Hygiene;" he should direct the Academic Board to set aside such time, to recommend such text-book and such number or relative weight for graduation standard, and to make such other recommendations as will enable the second lieutenants coming from West Point to be thoroughly grounded in the great laws of sanitary science and in the general principles of military hygiene.

The course of study must be conducted in the same spirit with which the other courses of study are conducted at West Point. The cadet must be marked for his work, for, with few exceptions, cadets do not apply themselves thoroughly unless they are marked for their work, and unless that mark will have some weight in determining their graduation standing. Failure to attain proficiency (two out of a maximum of three) should subject the cadet to the same penalties as in the case of other studies, viz.: re-examination after a certain interval

of time with loss of numbers, turning back to succeeding class, dismissal from the Academy. These are the ways, the best ways, the *only* ways to enforce the study of military hygiene at West Point.

It must be a course not merely of lectures but of recitations as well; there must be an "Instructor of Military Hygiene" who should be a member of the Academic Board so that he may properly present and look after the interests of his department. The chair of Military Hygiene should be filled by detail every four years and it may well be occupied by the senior surgeon of the post of West Point, who should be left there on duty that length of time.

The War Department is already convinced of the urgent necessity for imparting this instruction to the undergraduate cadets. This conviction was superinduced by the influence of the former surgeon-general, whose representations were powerfully reinforced by the terrible effects that ignorance, carelessness and lack of experience, on the part of officers and enlisted men, had caused in our camps of pollution during the Spanish-American War.

The influence of the surgeon-general in convincing the War Department of this great need of proper instruction in military hygiene, was much enhanced by the resolutions adopted by the American Medical Association representing the profession of the entire country. This Association, on June 7, 1899, unanimously recommended "that a professor of military hygiene be appointed at West Point to instruct the cadets in the principles of sanitation," and resolved that a committee be appointed to wait upon, and present this and other resolutions to the President of the United States for his favorable consideration.

The present Superintendent of the Military Academy, in 1895, stated to the Board of Visitors' Subcommittee on Discipline and Instruction: "I think that military hygiene is a very necessary course. Lectures on this subject were given in camp last year by medical officers of the post and will be given this year, to impress upon the cadets the necessity of military hygiene."

As a result of all these influences and recommendations, the *Secretary of War took the initiative* and authorized the institution of the present course of lectures in military hygiene and later, on March 1, 1904, he approved the resolution adopted by the Academic Board, recommending that Woodhull's "Military

Hygiene" be adopted as a *book of reference* for cadets of the second class who attend lectures on military hygiene.

The institution of this course of lectures is an advance over no instruction at all. Why has *the study* of military hygiene not been enforced in the same spirit that the other studies at West Point have been enforced? The answer is very simple. The course of studies *as at present arranged* at West Point, does not permit of any more *study time* being required of the cadets. They are already overworked.

If our recommendations are carried out, if the President, through his Secretary of War, directs the establishment of the course of study as we suggest, the Academic Board will find the necessary time *without adding to the study hours of the cadets*, just as they found the necessary time when they had to increase instruction in third class Spanish, when they had to provide for instruction in third class English, and later, when they had to provide for the course of lectures in military hygiene.

The standard of admission to the Military Academy has recently been considerably raised, but this fact has not yet been entirely made use of to eliminate part of the fourth class course, theretofore deemed necessary. If this were done, two hours a day every afternoon for four months from September to January of the fourth class year, would become available for instruction in something else—say, military hygiene. This time now, we consider practically thrown away, as the cadet is merely taken over the same ground that he has already had to show proficiency in when he passed his entrance examination! We might go into details for a much further gain of time, but we believe we have said enough to warrant the belief that the Academic Board, if directed by the Secretary of War can, and will, without detriment to the present high quality of work done at West Point, easily find the time for a course of study in military hygiene *without increasing the study time* required of the cadets.

The time is propitious for West Point to give its graduates a working basis to combat the deadliest of all enemies, disease; to give its graduates such a knowledge of sanitary science and of military hygiene, as will make them at all events the peers of civilian appointees and men from the ranks who may have had the benefit of a year at the Infantry and Cavalry School. The Secretary of War must act, for we do not think the Academic Board will, of its own initiative, recommend the

establishment of such a course of study. The Academic Board feels, we think, that such a course should be entirely a post-graduate course, given at the special service schools, and it fails to remember that very few of the graduates, especially those in the infantry and cavalry, ever have a chance to attend the courses at those schools.

THE UNITED STATES NAVAL ACADEMY AT ANNAPOLIS.

The surgeon in the navy like the surgeon in the army, in the important question of preserving the health of troops, is restricted to making recommendations and suggestions to his commanding officer; our remarks, therefore, concerning the urgent necessity for the instruction of the line officer of the army in military hygiene, apply equally to the line officer of the navy; to him, by the customs of the service, belongs the final responsibility, and he must be educated up to his duties. The graduate of the Naval Academy must be thoroughly grounded at Annapolis in the great laws of sanitation and in the principles of hygiene, *both* as applicable to the peculiar conditions surrounding the life of the sailor.

There are no requirements in hygiene for admission to the the Naval Academy, nor is there at present any instruction in military hygiene at that institution. A course of lectures is given in physiology and hygiene in the second term of the fourth class year, and a written examination is held at the end of the year. A maximum multiple of four in a total of eighty is assigned to the study. The scope of the lectures has varied widely in the past eighteen years. At times, the lectures have been valuable as giving instructions in first aid to the wounded. At others, they have been more theoretical. Instruction seems to depend on the fancy of the lecturer.

The Secretary of the Navy has full control over the curriculum at the Naval Academy, although, of course, Congress can by enactment, prescribe a course of study, and has by enactment, done so. (See 24 Stat. L., 69.—Act of Congress of May 20, 1886.—Appendix "B.")

To best enforce the study of military hygiene at the Naval Academy, the Secretary of the Navy should establish the office of "Instructor of Military Hygiene," to be filled by the senior medical officer on duty at Annapolis, who thus becomes a member of the Academic Board; he should direct the Academic

Board of the Naval Academy to set aside such time, to recommend such text-book and such number or relative weight for graduation standard and to make such other recommendations as will enable the midshipman coming from Annapolis to be thoroughly grounded in the great laws of sanitary science and in the general principles of military hygiene.

The remarks we made about the course in military hygiene at West Point apply equally well to the course at Annapolis; it must be conducted in the same spirit in which the other courses of study are conducted; there must be a text-book, recitations, markings, a graduation standard, and penalties for failure to attain proficiency.

By thus teaching military hygiene at the Naval Academy, all the officers of the navy that will be entrusted with *command* are reached, and a good foundation in that important branch is assured them. By insisting on an examination in that subject for promotion to the different grades; increasing in importance with the grade, study in military hygiene commensurate with increased command and responsibility is enforced.

To best enforce the study of military hygiene at our two national academies, the War Department and the Navy Department must take the lead and prescribe the course of study as we have recommended. The universal history of war, the professional opinions of medical men in the services throughout the United States, the welfare of the rank and file in both army and navy, the greater benefit to the country from its defenders in peace and war, all demand that the line officers of our forces ashore and afloat shall be educated to meet those duties and responsibilities which, in the preservation of the health of the enlisted men, the customs of the service have imposed upon them.

OTHER UNDERGRADUATE SCHOOLS.

We shall now take up our second subdivision of undergraduate schools, viz.: those educational institutions within the meaning of Section 1225, Revised Statutes and of the acts amendatory thereof, to which officers of the army and navy to the number of 110 may be detailed as professors of military science and tactics.

General orders No. 65, issued by the War Department, April 6, 1904, subdivides these institutions so far as the detail

of army officers (100) is concerned into the following three classes:

Class A. All schools to which officers of the army, active or retired, may be detailed under the provisions of existing law, except schools of the second and third classes.

Class B. Agricultural schools established under the provisions of the Act of Congress of July 2, 1862, and which are required by said act to include military tactics in their curriculum.

Class C. Military schools or colleges, *i. e.*, those whose organization is essentially military and one of whose primary objects is the acquisition of a high degree of military drill and discipline.

Appendix "C," shows the apportionment of details at colleges, universities, etc., under Section 1225, Revised Statutes, and the amendments thereof, based upon the number of officers of the army available for such details (100).

Appendix "D," shows the eighty universities, colleges, etc. (August 20, 1904), having officers of the army detailed as professors of military science, etc., and the classes A, B and C, to which they belong. It also shows the forty-six institutions which grade the military department equally with other departments, and make proficiency therein a requisite for securing a diploma.

At every institution of Class A, * * * at which a professor of military science and tactics is detailed, there shall be allowed a minimum of four hours each week during each school term to the department of military science and tactics; at every institution of Class B, there shall be allowed a minimum of five hours; and at every institution of Class C, there shall be allowed a minimum of six hours. This time shall be occupied as the professor of military science and tactics, in view of the hereinafter prescribed curriculum and such instructions as he may from time to time receive from the War Department, may deem best. (General Orders 65.)

The minimum course of military instruction, practical, and theoretical, at these schools in hygiene and first aid is as follows:

1. (a) Practical: Instruction in First Aid to the Injured.
- (b) Theoretical; One lecture on Camps and Camp Hygiene.
2. Class B. (a) Practical: Same as for Class A. (b)

Theoretical: Same as for Class A, and in addition, at least one lecture on camps and camp hygiene.

3. Class C. Same as Class B.

The military department of each institution is subject to inspection under the authority of the President of the United States; and the reports of these regular inspections must be submitted to the General Staff of the army for its critical examination, and the Chief of Staff reports to the Secretary of War, from the institutions which have maintained a high standard, the six whose students have exhibited the greatest application and proficiency in military training and knowledge.

The President of the United States has authorized the announcement that an appointment in the Regular Army (subject to examination and other requirements, as in case of candidates from civil life) will be awarded annually to an honor graduate of each of the six institutions thus designated, provided that sufficient vacancies exist after the appointment of graduates of the Military Academy at West Point, and the successful competitors in the annual examination of enlisted men. By the term, "honorgraduate," is understood "a graduate whose attainments in scholarship have been so marked as to receive the approbation of the president of the school or college, and whose proficiency in military training and knowledge and intelligent attention to duty, have merited the approbation of the professor of military science and tactics."

In every one of these eighty institutions the faculty has given proof of its intention and ability to comply with the regulations prescribed by the War Department and has shown that it is cordially in favor of such military instruction.

Bearing in mind that no detail of professor of military science and tactics is made at any institution which does not guarantee to maintain at least 100 pupils under military instruction, we see that there are at present *at least* 8000 pupils, and that when all the details are made then there will be at least 10,000 pupils *under military instruction* controlled by the *War Department*.

Who are these pupils? They are young men in every State of the Union, who, in the natural course of events, by virtue of their military education and training may go into the organized militia in time of peace, and who, in time of war, should be considered by the State and the National authorities

as proper young men to be given commissions in the volunteer forces.

By enforcing the study of military hygiene in all these educational institutions, we give a knowledge in this important subject to thousands of pupils with military ambition. In whatever military capacity they may hereafter serve, this knowledge on their part cannot fail to have great effect upon the prevention of preventable disease among their fellow soldiers.

The War Department appreciates the necessity for such instruction, and, as we have seen, has already taken the initiative.

To best enforce the study of military hygiene in these educational institutions, the War Department should prescribe the study of an elementary text-book on military hygiene. It has made its own precedent for this action by prescribing in institutions in Class C, the study of an elementary text-book on the Art of War. Recitations in military hygiene should be required at least one hour each week during the last term of the last school year. These recitations can well be held by the professor of military science and tactics. In addition, however, a medical officer, detailed for that purpose from the nearest post or station, should be required to deliver several lectures on military hygiene, the students being required to take notes and the subject of the lectures being made the basis of subsequent recitations.

An elementary text-book on military hygiene for use in these educational institutions has yet to be written. All that is wanted is to point out clearly the dangers to which the soldier is exposed, and how they are to be met.

The excellent "Notes on Military Hygiene," by Col. Alfred Woodhull, A.M., M.D., LL.D., U. S. Army, retired, can well be used as a book of reference in those institutions, and form the basis of lectures to be delivered by medical officers.

Much depends upon the professor of military science and tactics. Whether he be selected from the active or the retired list, his qualifications to fill the position with credit to the service should be the first consideration; he should be able to enforce the study of military hygiene in accordance with the requirements.

Much depends upon the medical officer detailed to serve on the General Staff. As a member of the Second Section, First

Division, he could well be placed in supervisory charge of instruction of military hygiene and first aid. By keeping in touch with the surgeon-general on the one hand, and with these educational institutions on the other, he should be able to evolve such a systematic scheme of instruction, as would thoroughly cover the ground and as would commend itself to the approval of the chief of staff and of the Secretary of War.

Over the military curriculum in civil institutions other than those at which army officers are detailed, the War Department has, of course, no jurisdiction; yet it is evident that the study of military hygiene should be encouraged in them all.

The War Department having taken the initiative, as we recommended, by enforcing this study in our national academies and in the civil educational institutions comprised in Classes A, B, and C, will then be in a position to recommend to the State military authorities "that the study of military hygiene be enforced in all the other State military and naval schools." It should, through its annual authorized inspections of the organized militia, keep in touch with progress made in this subject at these schools; it should recommend an elementary text-book and a course of study, and it should, upon request of the school and state authorities send medical officers of the army to deliver lectures during the school year, as may be necessary.

In spite of the deplorable losses from preventable disease amongst the volunteer troops during the last war, it is too much to hope for an enlightened public opinion sufficient to move State legislators in even one State, much less in all the States, to pass laws enforcing the study of military hygiene in State institutions of learning that claim to give military education and training; it is too much to hope that there will ever arise, in the medical profession or out of it, an earnest body of persistent and zealous workers, who will do for military hygiene what the ladies of the W. C. T. U. accomplished for their own specialty. The statutes quoted in Appendix "B" are a monument to those ladies' zeal and industry. Would that we had two such statutes enforcing the study of military hygiene in all our military and naval schools, State and National! And having two such statutes, would that they might be complied with in the spirit that the history of preventable disease in war has inculcated in the minds of our Army Medical Corps.

POSTGRADUATE SCHOOLS.

We now come to a consideration of the postgraduate schools. General Orders 115, current series of the War Departments, prescribes that at each military post there shall be a garrison school for the instruction of officers in subjects pertaining to the performance of their ordinary duties. Systematic recitations are required of the second and first lieutenants and captains of less than ten years' service. In the third year, in the infantry, cavalry and coast artillery, ten hours out of the yearly total of 150 are to be devoted to recitations in the theory of military hygiene; in the field artillery, fifteen hours are assigned, and in the engineers, the officer is supposed to pass a satisfactory examination in military hygiene before entering on the school course. The post surgeon at all garrison schools is instructor in military hygiene.

The general staff deserves great credit for giving us in this order our first co-ordinate scheme of military education. As far as military hygiene is concerned, the order is merely a beginning, but it shows a hearkening to the voice of history and to the advice of the medical corps that will bear the best of fruit in the future by enforcing now upon our younger officers, the study of this vital subject. This order wisely provides a means of effecting changes in the course by requiring division commanders to satisfy themselves through careful inspections by officers of their staff, that the instruction in these garrison schools is zealously and efficiently conducted, and to recommend such changes as may be needed to secure the highest possible efficiency.

We shall call attention to only one point. In the second year, fifty recitation hours are devoted to international law and fifty more recitation hours to military law. International law is a subject certainly that officers should be familiar with, yet the opportunity for the exercise of that knowledge may never arise during an officer's entire career; whereas a knowledge of military hygiene he will find occasion to use *every day* of his service with troops. Military law, at the War Academy, Berlin, receives one hour out of twenty-five weekly hours in Class II, *and so does military hygiene*, but the Germans, as we remarked before, are the greatest sanitarians in the world, which would naturally account for their deeming knowledge in that subject as important as a knowledge of military law.

Here is the opportunity of the Medical Corps to properly enforce the study of military hygiene. It will soon be apparent that the time set aside is sufficient to give to the line officer only a rudimentary knowledge of the subject and, until the course is extended, numerous lectures will have to supplement the course of studies and recitations.

By earnest work, zealous efforts and wise recommendations on the part of the post surgeons, the surgeon-general, through the Army War College and the Chief of Staff, should be able to have the study of military hygiene extended, not merely by an increase in the number of recitations and a supplementary course of lectures, but also by an enforcement upon the senior officers of a study of this same subject commensurate with their greater rank and more serious responsibility in the preservation of the health of their command.

First and foremost in the list of postgraduate schools stands the Infantry and Cavalry School at Fort Leavenworth, Kansas. It has attained this distinguished position by virtue of the enlightened efforts of its staffs of instructors and of its commandants. The object now of the Infantry and Cavalry School is to instruct "selected officers of the infantry and cavalry in the duties of these arms in war and in the general military knowledge needed for the proper exercise of the higher grades of command." It has five departments of instruction and one of them is the department of military sanitation and hygiene. It is the only special service school where military hygiene is taught at all, and the only school in the army where it is taught with the dignity the subject deserves.

General Orders 1 of this year gives the subject a maximum value of 50 out of a possible 100. General orders 115 prescribes that the instruction will hereafter consist "of lectures amplifying the subject as taught in the garrison schools, and practical exercises in sanitary inspections and reports covering habitations, drainage and sewerage, clothing and personal habits of the men; water, food and cooking; police and disposal of wastes, etc." Proficiency in all subjects is made a condition, of course, to receiving a diploma; but for failure, in our opinion, a sufficient penalty is not prescribed. An officer failing to pass a satisfactory reexamination after a year's study of military hygiene, should be dropped from the rolls of the army; it is better to penalize the officer than perhaps later to fill our graveyards with innocent victims. An officer of this

kind will not much mind being relieved from the school, being returned to his regiment, and having made in his case a special report to the War Department. A suitable reward for success and a suitable penalty for failure go hand in hand with the proper enforcement of study in our military schools.

The same course of study in military sanitation and hygiene now taught at the Infantry and Cavalry School, should be enforced at the Artillery School at Fortress Monroe and at the School of Application for Cavalry and Field Artillery at Fort Riley. The main object of both these latter schools is to give to cavalry and artillery officers more advanced instruction in the active duties of their respective arm of service than they can acquire at the ordinary post. This is exactly what the Infantry and Cavalry School does for the selected infantry and cavalry officers and it is exactly such an advance over instruction in the garrison schools that is given by the department of military sanitation and hygiene at Leavenworth.

To bring about this enforcement at these two schools it will be necessary to convince the permanent *personnel* of the Army War College and the Chief of Staff of its absolute necessity therein, either directly through the surgeon-general and the medical officer on duty with the general staff, or indirectly through the intelligent and enlightened action and recommendation of the commandants and staffs at those special service schools. In the latter case, much will depend upon the army surgeons on duty at those stations; the methods pursued at Leavenworth, in bringing about action can well be imitated by them. The time has come for giving officers of all arms such a knowledge of military hygiene as will reduce the deaths from disease to the same ratio as the deaths from bullets—the deaths from disease being due entirely to such unavoidable causes as exposure, climate and severity of campaign. All methods that will tend toward that end should be invoked, and therefore, efforts to institute advanced courses in military hygiene at Fortress Monroe and at Fort Riley, should be incessant.

It has been an axiom with all great commanders to take the best possible care of their fighting men in every way, especially, however, in the preservation of their health; then, when military necessity became paramount, to sacrifice unhesitatingly this most valuable consideration in order to attain the object of the campaign or war.

Military administration in time of peace and strategy in time of war, demand careful investigation of the inter-relation of these two controlling elements. We have no school where the line officer can study the influences of health and disease on administration and strategy—yet these are the very subjects that general staff officers will have to consider. We recommend such an advanced course at the new Staff College founded by General Orders 115, at Fort Leavenworth, where our specially selected officers of engineers, cavalry, artillery and infantry are to be instructed in the duties of general staff officers in time of war, and where are to be made such recommendations as may concern the practical efficiency of the several arms of the service in war.

Finally, at the Army War College, the keystone of our educational arch, and at the Navy War College, should be carefully considered the practical application of all knowledge of military hygiene in the regulation and conduct of army maneuvers and those conducted jointly with the navy. By both these colleges should also be carefully prepared critical analyses of the military hygienic system of foreign armies, and the publication of such knowledge for the benefit of the military profession.

The system of education as promulgated is well nigh perfect in conception; some of the details are naturally capable of improvement, but we feel that if the necessity therefor be clearly shown, none will be readier to incorporate good suggestions than the officer of the *personnel* of the War College, and none will be readier to adopt them than the general staff, which, in everything it has undertaken thus far, has shown itself to have at heart the very best interests of the service.

HOW BEST TO PROMOTE INTELLIGENT PRACTICE.

We now take up the second subdivision of our theme: How best to promote the intelligent practice of military hygiene in our army.

1. If the Medical Corps of the army succeeded in securing and retaining the best young doctors obtainable from civil life, and if, after entry into the corps, these doctors were made so to devote themselves to study and practice as to become, and to show that they were, experts in military sanitary and hygiene matters.

2. If the line officers from the second lieutenant to the general were properly and systematically educated, instructed and trained to meet their responsibilities in preserving the health of the men and were made to show, in their examinations for promotion, to include colonels, that in both theory and practice they understood and could apply this most important part of their duty.

3. If the enlisted men were, by instruction and training and discipline, imbued with a due sense of responsibility in the part they must play in order to preserve their own health and the health of their comrades.

4. If, in the purchase, expenditure and accounting of material and supplies to be used in experimental, instructive and practical purposes of demonstration of military discipline and military hygiene, in post, camp and on the maneuver field, the War Department were liberal and generous and insisted upon all subordinates taking into consideration only the welfare of the command and the preservation of health.

5. If, finally, in our field maneuvers—departmental, divisional and army—the War Department, the Army War College and the commanding generals, were to devote proper attention to fully developing the opportunities presented of putting into actual use, under conditions approximating those of actual war, all that has been learned and practiced in school and post, by enlisted man, line officer and medical officer. If all these *ifs* we have mentioned were accomplished facts, there would, in our opinion, be a vast improvement in the intelligent practice of military hygiene in our army. Let us examine these five points more in detail.

1. Although under the customs and usages of the service in sanitary and hygienic matters as we have shown, the *final* responsibility in preserving the health of the army rests with the line officer, yet the medical officer is the one upon whose shoulders must be the *great* responsibility of making to his commanding officer the proper recommendations and suggestions to meet each particular set of conditions. He need not wait to be consulted, When he recognizes the need for his services, he must put himself on record in writing, and, to the utmost of his ability, consonant with his position, he must use his knowledge and training to carry out his sanitary and hygienic duties—the most important duties that by the regulations fall to his lot, in preserving the efficiency of the army.

The medical corps should be satisfied with the very best material only. It takes four years of unremitting toil to secure a degree in medicine and about two years of hospital practice to make the finished doctor; here are six years of very expensive education and training, costing pretty nearly \$10,000. The successful physician, after establishing in practice, say, in New York, where competition is greatest, will easily earn, at the end of his first year's practice, the equivalent of a mounted captain's pay in the army; at the end of another year he will easily earn the equivalent of a major's pay; and in five years, our bright young practitioner will be earning the equivalent of a brigadier-general's salary.

Now that bright and successful doctor is the one you want to get into the army; what attractions are offered him by the medical corps? A first lieutenant's pay for the first five years, then a captain's pay for—no one knows exactly how long, and the probability now is that he will never get beyond a majority but will retire in that grade.

It is self-evident that Congress must come to the help of the medical corps and remove the demoralizing effects of the Act of February 2, 1901, so that the very best young civilian doctors will not sneer at the supposed advantage in joining the army but will seek to enter the corps, drawn by the prospects in pay and promotion opening before them, so that the trained doctors will not leave the service disgruntled, taking with them their training and knowledge into much more lucrative civilian practice.

Having secured a sufficient and regular supply of the best young physicians from civilian life, the medical corps should again be satisfied only with the hardest kind of enthusiastic work throughout all its grades.

The Army Medical School at Washington, D. C., plays a leading part in educating the officers of the corps in the duties of their profession. The most important subject taught at this school is military hygiene. Out of thirteen subjects, with a total maximum of 7000 and a total minimum of 4900, it receives a maximum of 800 and a minimum of 560.

It is a well-known fact that in civilian medical schools and colleges the subject of military hygiene is practically not taught at all; there are some exceptions, but the statement holds good that in nine out of ten schools, this subject is a closed book

to the student. Hence the importance of this study to the student candidate.

General Orders 115 fixes the system recently tried at the Army Medical School: student candidates, besides passing a preliminary examination must, after the eight months' course at the school, pass a final or qualifying examination before being given a commission. This is unquestionably for the best interests of the service.

If the medical corps is increased as justice and efficiency demand it to be, instruction at the Army Medical School can readily be extended to a greater number of medical officers than merely those doing duty in the vicinity of Washington, or who are on leave of absence, etc. Efficiency demands that they be given every opportunity in Washington and elsewhere to become properly acquainted with advances in their profession.

No stagnation in intellectual and practical work should be permitted in any grade. The major and the lieutenant-colonel should be made to show their fitness for promotion to the next higher grade.

Considering only the welfare of the army in time of war, it is to be hoped the doctor that has to be picked up haphazard, is a thing of the past. Many most excellent men rendered invaluable services, but many also were, through their ignorance of military administration, military hygiene and practice of medicine, worse than useless. We therefore heartily recommend the establishment of a medical reserve corps, such as that proposed by the surgeon-general, which, in addition to other advantages, will give the Medical Department a number of doctors outside the army to fall back upon at once, at the outbreak of hostilities.

We also recommend the discouragement, as much as possible by the War Department, of the use of political and other influence to secure positions in the army for doctors who have been failures in civil life—in time of war we want the very best the country affords, not the very worst. Many lips now mute, if they could be heard, would silence forever the clamors of the politician.

The greatest possible efficiency of the medical corps is an important consideration in promoting the intelligent practice of military hygiene and preserving the health of the army.

2. In our remarks on the necessity for the education of

the line officer in military hygiene, and on how best to enforce that study in our military and naval schools, we have stated our position on the education that should obtain in the army, not only of the second-lieutenant, but of all the line officers, not only in undergraduate schools, but in our garrison and special service schools, the Staff College, and the War College itself, we shall, therefore, not repeat what we said there but shall make a few supplementary observations from a practical standpoint.

Let the line officer read the remarkably complete and suggestive chapter, "Scheme for a Sanitary Inspection by Company Officers," pp 218-224. Woodhull's "Military Hygiene," then let him read the excellent chapter, pp. 185-217, "The Care of Troops in the Field," and he will get an idea of the complexity of the duty devolving upon him in preserving the health of his men; there is no one else who can perform this duty for him—his is the duty and the responsibility. He must meet both in the proper spirit.

In recruiting (on which the efficiency of the army in great part depends), in the care of the person, in camping, in marching, in ventilation, in the drinking water, in the preparation, cooking, and serving of food, in the care and cleanliness of the post or camp, in the proper exercise and the wholesome recreation of the men, the main responsibility rests on the line officer. He must meet that responsibility in the proper spirit.

The War Department keeps a watchful eye on the recruiting of the army, as the frequent circulars of admonition show, but who keeps a watchful eye on the multitudinous details that affect the health of the men? If the commanding officer required all his subordinates to devote the proper time to the practical part of supervising these important matters, there would be not only great improvement therein, but there would be acquired by the line officer *the habit* of dealing practically with sanitary and hygienic matters in the post, that he could readily apply in the field to the benefit of the health of his command.

We shall illustrate what we mean and in doing so, shall select the great and vital point in military hygiene—the teaching of the subject of preventable disease.

It is far more important for the line officer to know *how* preventable diseases are propagated than it is for him to know everything else about them; for when he knows *where* the

danger lies, guarding against that danger is merely to apply good, hard, common sense principles, which, as we pointed out in the beginning, have become our stock in trade by the sacrifice of untold lives.

The diseases of camp life and how they are propagated are all well known. The army of the United States at different times and in different places, has been in intimate contact with every one of them, and, as the need has arisen, the surgeon-general of the army and the chief surgeons of divisions and departments, have drawn up for promulgation, in orders by commanding generals, instructions concerning the propagation of those dread enemies and the measures to be taken to guard against them.

Take, for instance, Circular No. 62, from the Headquarters of the Army, series 1902, on "Personal Hygiene for the Prevention of Typhoid Fever in Camps," and General Orders No. 58, from Headquarters, Division of the Philippines, series 1902, on "Precautions Against Cholera." Here, in two nutshells, we have the subjects of cholera and typhoid fever and the duties imposed upon the line officer in preserving the health of his men when those scourges are present.

We recommend that the authorities at the Army Medical School compile and correct to date a series of actual general orders and circulars issued on the various preventable diseases, this compilation to be the standard text-book on preventable disease and issued to every officer, organization and school.

We recommend that once each month during the school year, the commanding officer, on the recommendation of the post surgeon, shall issue an order as follows: "Beginning with Monday, the — inst., it will be assumed that cholera (or some other camp scourge) has made its appearance at this post. The commanding officer of each organization will be held responsible that his men live in accordance with the requirements of General Orders —, for the period of two (or other number) of days. The post surgeon is charged with the supervision of all details and will make, with the post commander, an inspection each morning of the organizations at which all officers, non-commissioned officers and men will be present."

During encampments and maneuvers the same methods should be pursued.

Practical demonstrations like this, of actual living under assumed cholera and other preventable disease conditions, are

what we need in the army, so that what the doctor says may not go into one ear and out at the other, as is too often the case; and if the details are properly carried out, the experience gained therein would be of the greatest value in *drilling* officers and men in guarding their health under the most dangerous circumstances.

3. What is it that has enabled the German Army to accomplish what in some armies is a practical failure? *Discipline*. It is necessary with enlisted men, not merely to devise a system of rules for the preservation of health, but to see also that those rules are enforced; therefore, a well-disciplined command is apt to be a healthy command, at all events, a healthier command than a poorly disciplined one. The great evil that all officers of the medical corps and of the line have to contend against with the enlisted men, is their ignorance or wilful violation of the most ordinary rules of health. *Public opinion* in the ranks must be educated to a higher plane in the important matter of military hygiene if we want to get good results.

No matter how many orders are issued, nor by whom issued, unless you can awaken a due sense of responsibility on the part of each and every man in the ranks, the good accomplished will never even approximate the good that should be done. The private soldier, now ignorant of many matters that pertain to his health, even the otherwise intelligent non-commissioned officer, will need many patient and practical demonstrations of the immense importance of individual co-operation. The Army Medical School should devise an elementary text-book that will teach the simple rules of health to the enlisted men. Some book on the lines of "Sanitation and Health," by Maj.-Gen. Sir R. C. Hart, V.C., as revised by Col. T. H. Hendley, C.I.E., I.M.S., is what is needed. Such a book should be placed in the hands of each soldier. In addition, there must be heart to heart talks by the surgeon, impressing upon the men their individual responsibility in caring for their own health and necessarily, the health of their comrades, who might suffer by their wilful neglect. Then must come the discipline of the line officer to enforce, in necessary cases, all these precepts. *But* the work will not be complete, we repeat, unless there is developed, on the part of the enlisted men, an individuality and responsibility that go to the root of the evil—a moral responsibility—a discipline that follows the individual man, not only while under the eye of his commissioned and non-commissioned

superior—not only while in the presence of his comrades—but a discipline that stays with him away from his fellows, that follows him in the secrecy of his own actions, that keeps him from violating the rules prescribed for his ordinary guidance and for his extraordinary guidance in time of extreme peril, that keeps him from giving way to the temptation of the moment, whether it be a question of drinking unboiled water in typhoid fever districts, or eating fruit in cholera epidemics. A discipline of the highest type that controls him, not through fear of punishment, not entirely through fear of personal injury, but the strong moral safeguard that makes him abhor the thought of bringing disease and ill-health amongst his comrades, ruining his own and their lives, destroying the efficiency of the command, and possibly bringing disaster on his country!

The greatest good in practical care-taking will be done the men if the scheme we have proposed, of having the command in post, camp and on the maneuver field live at certain times under conditions of epidemic, be conscientiously carried out by all concerned. That will be the time to enforce instruction and discipline and develop in each individual soldier the moral responsibility we have mentioned.

4. Niggardliness in time of peace is always productive of waste in time of war. In everything that pertains to giving officers and men education, instruction, and training in guarding against and preventing the spread of preventable disease, no expense should be spared. In the practical work we have recommended necessary material and supplies, such as wire screening, lumber, nails, disinfectants of all kinds, means for destruction of fecal matter and refuse, sterilizers, dry earth closets, and a thousand and one other things by experience found necessary, should be approved on requisition, should be on hand for the period of practical work in post, camp and on the maneuver field, and should, whenever necessary, be freely used and expended.

It is to be hoped that such questions as "shall lime for disinfecting purposes be furnished by the Medical or by the Quartermaster's Department?" have been forever laid at rest; entirely too much paper work and entirely too little lime was the outcome. The broadest possible spirit is necessary. When health and efficiency are at stake and there is a question as to which department should act, *both* departments would do well

to purchase and supply, leaving the settlement of the controversy to other and more propitious occasions.

5. Slight advantage only has been taken of the army maneuvers to give to officers and men instruction in the practical application of the principles of military hygiene.

The permanent *personnel* of the Army War College who, under the Chief of Staff, are charged with the regulation and conduct of army maneuvers, should, in their annual scheme, include the practical application of the knowledge acquired in military hygiene during the year, by setting aside two days during which the whole command in the field should be required *to live* as though some preventable disease, some preventable camp scourge, like typhoid fever or cholera, had broken out.

The disease for each year should be announced long in advance. All troops should be required to come prepared, as far as possible, by study and instruction, and the Medical Department should arrange for its material and supplies to carry out its part of the practical work.

The first day, at a given hour, troops by order *will begin to live* as though the disease were imminent, it having made its appearance in a neighboring town frequented by the men. The second day, the disease will be assumed to have shown itself amongst the troops; isolation hospitals will be established; men by lot will be considered stricken; quarantine, detention, disinfection, and hospital service will all be carried out as in case of actual epidemic. The instruction should conclude at a certain hour; and, on the following day, the senior surgeon, taking the place of the chief umpire, might well discourse to the assembled officers, about the *mistakes made* and the lessons learned.

The problem is a very serious one and our experiences during the Spanish-American War show that it is deserving of our best thought and our most earnest efforts; the hearty cooperation of the medical officer, the line officer, and the enlisted man are necessary to successful solution.

We believe that the measures we have proposed will result in improving the intelligent practice of military hygiene in our army. No more serious study confronts the military student than how properly to preserve the health of troops. Nothing is more difficult to deal with than disease in war; and, to the conscientious officer, nothing is more horrible to contemplate than the suffering and death that not only can but should be prevented.

"REQUIESCAT"—45.

APPENDIX "A"

COURSE OF LECTURES ON MILITARY HYGIENE DURING THE
MONTHS OF APRIL AND MAY.*(2 P. M. Every Alternate Day.)*

BY LIEUT-COLONEL V. HAVARD, MEDICAL DEPARTMENT, U.S.A.

1. Object and Scope of Military Hygiene. Statistics of Morbidity and Mortality in the Army.
2. Recruiting.
3. Exercise and Marching.
4. Water.
5. Food.
6. Military Ration.
7. Air.
8. Ventilation.
9. Heating and Lighting.
10. Clothing and Equipment.
11. Disposal of Excreta.
12. Sewage and Garbage.
13. Camps.
14. Posts, Barracks and Quarters.
15. Personal Hygiene.
16. Alcoholism and Venereal Diseases.
17. The Prevalent Diseases of the Soldier.
18. Malarial Fever and Yellow Fever.
19. Service in Hot and Cold Climates.
20. Inspection and Disinfection.

APPENDIX "B."

SECTION I. "The nature of alcoholic drinks and narcotics, and special instruction as to their effects upon the human system, in connection with the several divisions of the subject of physiology and hygiene, shall be included in the branches of study taught in the common or public schools and in the military and naval schools, and shall be studied and taught as thoroughly and in the same manner as other like required branches are in said schools, by the use of text-books in the hands of pupils where other branches are thus studied in said schools, and by all pupils in all said schools throughout the Territories, in the military and naval academies of the United States, and in the District of Columbia, and in all Indian and colored schools in the Territories of the United States. Act of May 20, 1886. (24 Stat. L., 69.)

SEC. 2. It shall be the duty of the proper officers in control of any school described in the foregoing section to enforce the provisions of this act; and any such officer, school director, committee, superintendent or teacher who shall refuse or neglect to comply with the requirements of this act, or shall neglect or fail to make proper provisions for the instruction required and in the manner specified by the first section of this act, for all pupils in each and every school under his jurisdiction, shall be removed from office. and the vacancy filled as in other cases. Act of May 20, 1886. (24 Stat. L.)

APPENDIX "C."

Apportionment of details at colleges, universities, etc., under Sec. 1225, Revised Statutes, and the amendments thereof, based upon the number of officers of the army available for such details.



STATES	POPULATION OF STATES ARRANGED IN GROUPS CENSUS 1900	POPULATION OF GROUPS AND OF STATES NOT ARRANGED IN GROUPS CENSUS 1900	DETAILS FOR LAND- GRANT SCHOOLS	DETAILS BY POPU- LATION	TOTAL DETAILS DUE.
Maine.....	694,466		I	..	..
New Hampshire...	411,588		I	..	..
Vermont.....	343,641	1,449,695	I	I	4
Massachusetts.....		2,805,346	I	2	3
Rhode Island.....	428,556		I	..	..
Connecticut.....	908,420	1,336,976	I	I	3
New York.....	7,268,894		I	..	..
New Jersey.....	1,883,699	9,152,563	I	7	9
Pennsylvania.....	6,302,115		I	..	..
Delaware.....	184,735	6,486,850	I	5	7
Maryland.....	1,118,044		I	..	..
Dist. of Columbia.	278,718	1,396,762	..	I	2
Virginia.....	1,854,184		I	..	..
West Virginia.....	957,800	2,812,984	I	2	4
North Carolina....		1,893,810	I	I	2
South Carolina....		1,340,316	I	I	2
Georgia.....	2,216,331		I	..	..
Florida.....	528,542	2,744,873	I	2	4
Alabama.....		1,828,697	I	I	2
Mississippi.....		1,551,270	I	I	2
Louisiana.....		1,381,625	I	I	2
Arkansas.....		1,311,564	I	I	2
Texas.....	3,048,710		I	..	..
Oklahoma.....	398,331		..	..	..
Indian Territory..	392,060		..	..	..
New Mexico.....	195,310	4,034,411	..	3	4
Tennessee.....	2,020,616		I	..	..
Kentucky.....	2,147,174	4,167,790	I	3	5
Ohio.....		4,157,545	I	3	4
Indiana.....		2,516,462	I	2	3
Michigan.....		2,420,982	I	2	3
Illinois.....	4,821,550		I	..	..
Wisconsin.....	2,069,042	6,890,592	I	5	7
Iowa.....	2,231,853		I	..	..
Missouri.....	3,106,665	5,338,518	I	4	6
Minnesota.....	1,751,394		I	..	..
North Dakota.....	319,146		I	..	..
South Dakota.....	401,570		I	..	..
Montana.....	243,329	2,715,439	I	2	6
Kansas.....		1,470,495	I	I	2
Nebraska.....	1,066,300		I	..	..
Colorado.....	539,700	1,606,000	I	I	3
Alaska.....	63,592		..	..	..
Washington.....	518,103		I	..	..
Oregon.....	413,536		I	..	..
Idaho.....	161,772		I	..	..
Wyoming.....	92,531		I	..	..
Nevada.....	42,335		I	..	..
Utah.....	276,749		I	..	..
Arizona.....	122,931	1,691,549	..	I	7
California.....	1,485,053		I	..	..
Hawaii.....	154,001	1,639,054	..	I	2

APPENDIX "D."

80: 21 A; 39 B; 15 C; 5 Not Classified.

UNIVERSITIES, COLLEGES, ETC.

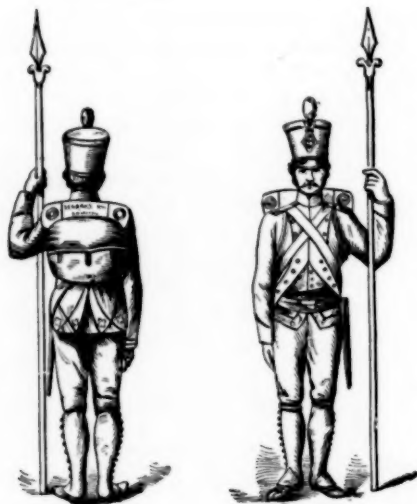
HAVING OFFICERS OF THE ARMY DETAILED AS PROFESSORS OF MILITARY
SCIENCE, ETC.*(Classes noted in left margin, except in cases of details without pay,
from retired list. Schools having such details, not classified.)*

Arizona.....	A	University of Arizona, Tucson.	
Arkansas.....	B	University of Arkansas, Fayetteville.	
	A	Ouachita College, Arkadelphia.	
California.....	B	University of California, Berkeley.....	x
	C	St. Matthews Military School, San Mateo.	
	C	Mount Tamalpais Military Academy, San Rafael.....	x
Connecticut.....	A	Yale University, New Haven.....	
Delaware.....	B	Delaware College, Newark.....	x
Florida.....	B	University of Florida, Lake City.	
		East Florida Seminary, Gainesville.	
Georgia.....	C	Georgia Military College, Milledgeville....	x
	A	Gordon Institute, Barnesville.....	x
	B	North Georgia Agricultural College, Dahlonega, Ga.....	x
Idaho.....	B	University of Idaho, Moscow.....	x
Illinois.....	B	University of Illinois, Champaign.....	x
Indiana.....	C	Howe Military Academy, Lima.....	x
	B	Purdue University, Lafayette.	
Iowa.....	A	Simpson College, Indianola.	
	A	State University, Iowa City.....	x
Kansas.....	B	Kansas State Agricultural College, Manhattan.	
Kentucky.....	B	Agricultural and Mechanical College of Lexington.	
Louisiana.....	B	State University and Agricultural College, Baton Rouge.....	x
Maine.....	B	University of Maine, Orono.....	x
Maryland.....	A	St. John's College, Annapolis.....	x
	B	Maryland Agricultural College, College Park	x
Massachusetts....	B	Massachusetts Agricultural College, Amherst.....	x
		Massachusetts Institute of Technology, Boston.....	x

Michigan.....	C	Michigan Military Academy, Orchard Lake	x
	B	Michigan Agricultural College, Lansing....	x
Minnesota.....	A	Shattuck School, Faribault.....	x
	B	University of Minnesota, Minneapolis.....	x
Mississippi.....	B	Agricultural College (Mechanical Agricultural College.....	x
Missouri.....	C	Blees Military Academy, Macon.....	
	A	St. Louis University, St. Louis.	
	C	Wentworth Military Academy, Lexington.	x
	C	Kemper Military School, Boonville.....	x
	B	University of Missouri, Columbia.....	x
Nebraska.....	B	University of Nebraska, Lincoln.....	x
Nevada.....	B	Nevada University, Reno.....	x
New Hampshire..	B	New Hampshire College of Agricultural and Mechanical Arts, Durham.....	x
New Jersey.....	B	Rutgers College, New Brunswick.....	x
		Montclair Military Academy, Montclair.	
New Mexico.....	A	College of Agricultural and Mechanical Arts, Mesila Park.	
New York.....	A	College of St. Francis Xavier, New York City.	
	A	St. John's College, Fordham.	
	C	St. John's Military College, Manlius.....	x
	C	New York Military Academy, Cornwall-on-Hudson.....	x
	A	Riverside Military Academy, Poughkeepsie.	x
	B	Cornell University, Ithaca.....	x
	A	De La Salle Institute, New York City.	
North Carolina...	B	North Carolina College of Agriculture, W. Raleigh.....	x
North Dakota....	B	North Dakota Agricultural College, Fargo.	
Ohio.....	B	Ohio State University, Columbus.....	x
	A	Marietta College, Marietta.	
	A	Ohio Wesleyan University, Delaware.	
	B	Ohio Normal University, Ada.	
Oregon.....	B	Oregon Agricultural College, Corvallis.	
Pennsylvania.....	A	Girard College, Philadelphia.....	x
	C	Pennsylvania Military College, Chester....	x
	B	Pennsylvania State College, State College..	x
	A	St. Joseph's College, Philadelphia.	
South Carolina..	B	Clemson Agricultural College, Clemson....	x
	C	South Carolina Military Academy, Charleston.....	x
South Dakota....	B	South Dakota Agricultural College, Brookings.	
	A	University of South Dakota, Vermillion.	

Tennessee.....	B	University of Tennessee, Knoxville.....	x
	A	University of the South, Sewanee.	
	A	Southern Normal University, Huntingdon.	
Texas.....	C	West Texas Military Academy, San Antonio	x
	B	Agricultural and Mechanical College of Texas, College Station.....	x
		Peacock Military School, San Antonio.	
Utah.....	B	Agricultural College of Utah, Logan.	
Vermont.....	C	Norwich University, Northfield.....	x
	B	University of Vermont.....	x
Virginia.....	C	Virginia Military Institute, Lexington.....	x
Washington.....		Gonzaga College, Spokane.	
	B	Washington Agricultural College, Pullman.	
West Virginia....	B	West Virginia University, Morgantown....	x
Wisconsin.....	B	State University of Wisconsin, Madison....	x
Wyoming.....	B	University of Wyoming, Laramie.....	x

"x" in the right margin: Institutions which grade the military department equally with other departments and make proficiency therein a requisite for securing a diploma. Names of most distinguished students in the military department graduated at last commencement appear in Annual Army Register.



PERSONAL RECOLLECTIONS OF GENERAL GRANT AND HIS CAMPAIGNS IN THE WEST.*

BY MAJOR-GENERAL GRENVILLE M. DODGE, U. S. V.



As a soldier, General Grant stands first in all the history of warfare. As a citizen, his acts, his foresight, and his method of meeting and settling all great questions, stamp him as the peer of the best statesmen that the world has produced. In fact, in the Old World his statesmanship is considered equal to his great achievements as a soldier. As he came to be known only after he was forty years old, the question naturally arises, Was there anything in his boyhood or early manhood that indicated the abilities that were so rapidly developed during the Civil War? He says that as a boy he only loved horses and work on the farm, not books, and that even the uniform of a soldier had no attractions for him; that he was an indifferent scholar, and preferred reading a novel to studying his lessons; that his great desire was to travel and see our country, and when he was appointed to West Point the only inducement for him to accept was the disgrace it would bring upon him to decline after his father had asked for the appointment; and, finally, he was reconciled to it because it would enable him to see Philadelphia and New York; and that his long stay in those cities, instead of repairing promptly to West Point brought a sharp reminder from his father.

At West Point Grant was an indifferent scholar, had a positive dislike to everything military, and neglected his studies. After graduating he remained in the army, hoping to be a professor at West Point, rather than an officer in the field. He considered the Mexican War an unholy one. He says: "I regarded the war as one of the most unjust ever waged by a stronger against a weaker nation, from the inception of the movement to its final consummation—a conspiracy to acquire territory out of which slave states might be formed for the American nation. The Southern Rebellion was the outgrowth of the Mexican War."

*Delivered before the New York Commandery of the Military Order, Loyal Legion, U. S.

Grant joined Taylor's command on the Rio Grande, and although acting as quartermaster, he took part in nearly all the battles. He says: "At the battle of Monterey my curiosity got the better of my judgment, and I mounted a horse and rode to the front to see what was going on. I had been there but a short time when the order to charge was given, and lacking the courage to return to camp, where I had been ordered to stay, I charged with the regiment."

He evidently took in the tactics, logistics and strategy, and sometimes criticized them. In one or two of the last fights, near the city of Mexico, he thought the enemy could have been driven out by flank movements without the great losses in front attacks on the enemy's strong positions. At the gates of Mexico he developed some of those wonderful qualities that were so prominent in the Civil War, when he took his little squad of men to flank the Mexican troops out of their position at the Garita San Cosme, and caused the fall of the city of Mexico, and received the commendation of the commanding officer, and was brevetted.

After this campaign in the Mexican War, he seemed less inclined than ever to follow the army permanently, and soon resigned and returned to civil life.

General Grant entered the service in the Civil War as Colonel of the 21st Illinois Infantry, and brought the regiment to great efficiency. He was sent to northern Missouri. His first order was to march against Colonel Harris, who had a rebel regiment near the town of Florida. General Grant says: "As we approached the brow of the hill from which it was expected we could see Harris' camp, and probably find his men ready formed to meet us, my heart kept getting higher and higher until it felt to me as though it was in my throat. I would have given anything then to have been back in Illinois, but I had not the moral courage to halt and consider what to do. I kept right on, and when I found that Harris had left, it occurred to me at once that Harris had been as much afraid of me as I had been of him. This was a view of the matter I had never taken, and it was one I never forgot afterwards. From that event until the close of the war, I never experienced trepidation upon confronting the enemy, although I always felt more or less anxiety. I never forgot that the enemy had as much reason to fear my force as I had his. The lesson was a valuable one."

From north Missouri he was sent to southeast Missouri, and was then made a brigadier-general, and ordered to Cairo. His first important battle was Belmont, brought about by his movement to threaten Columbus. His orders were to make a demonstration against the Confederate force at or near Columbus, Tenn., to prevent their sending reinforcements to a Confederate command that a Federal force had been sent to attack on the St. Francis River.

BELMONT.

Grant had no intention of fighting a battle when he started out. His orders did not contemplate an attack, but after he started he says that he saw that the officers and men were elated at the prospect of doing what they volunteered to do, fight the enemies of their country, and he did not see how he could maintain discipline or the confidence of his command if he returned to Cairo without attempting to do something. This battle first brought the country's attention to Grant. He displayed that confidence, good judgment and self-reliance that afterwards became so conspicuous.

FORT HENRY AND DONELSON.

General Grant was ordered soon after Belmont to make a demonstration up the Tennessee River, and towards Columbus, Ky., with a view of holding the Confederate forces there while the campaign around Bowling Green was proceeding. In this movement Gen. C. F. Smith reported that Fort Heineman, opposite Fort Henry, on the Tennessee River, could be captured. Grant believed the true line of operation for his force was by the Tennessee and Cumberland Rivers, and asked permission to visit St. Louis and lay the plan before General Halleck, but says: "I was received with so little cordiality that I perhaps stated the subject of my visit with less clearness than I might have done, and I had not uttered many sentences before I was cut short as if my plan was preposterous, and I returned to Cairo very much crestfallen." On his return he consulted Flag-Officer Foote, who commanded the gunboat fleet on the Mississippi River, and he agreed with Grant, and, notwithstanding his rebuff, Grant renewed the suggestion, backed by Flag-Officer Foote, and on January 28th wrote General Halleck

fully in regard to his plans. On the first of February he received instructions, going fully into every detail, to march upon and capture Fort Henry. On the second the expedition was started, and on the sixth Fort Henry was captured, and Grant wired Halleck that on the eighth he would move on Fort Donelson, not even waiting for orders to do so. On February 16, 1862, Fort Donelson surrendered to him with its entire force. Grant in this battle displayed the tactics which were ever in his mind, that when the enemy attacked to also attack on some other portion of the line, and when the enemy attacked and turned his right he immediately attacked and turned the enemy's right, and carried their intrenchments, forcing the final surrender.

In writing Mrs. Grant of the capture of Forts Henry and Donelson, he says: "These terrible battles are very good things to read about for persons who lose no friends, but I am decidedly in favor of having as little of them as possible. The way to avoid it is to push forward as vigorously as possible."

After Forts Henry and Donelson, Grant started to carry out this program and visited Clarksville and Nashville. Because General Halleck, his commanding officer, did not receive prompt reports from General Grant, he issued this order:

"You will place Maj.-Gen. C. F. Smith in command of expedition and remain yourself at Fort Henry. Why do you not obey my orders and report strength and position of your command?"

Up to this time Grant had not received one word from Halleck, and all his reports sent to Halleck went to the end of the telegraph line, where the operator was a rebel, who deserted and took all these dispatches with him. Buell, Halleck and McClellan all failed to comprehend Grant's great victories. They were looking for the enemy to recover, while Grant thought of nothing but their demoralization and the desire to follow them. Grant, on the ground, was the only person who saw the situation, and had any power to take advantage of it. The rebels, in their consternation, abandoned everything as fast as possible, and even evacuated Chattanooga, three hundred miles away.

When Halleck got into communication with Grant, he informed him that he was advised to arrest him because he went to Nashville, a point within his own command, and no one could hear from him. They could not trust the man who

within thirty days had broken through the entire rebel line, driven their forces beyond the Tennessee and captured their fortified places and all the troops in them. In writing of this to his wife, Grant says:

"All the slander you have seen against me originated away from where I was. The only foundation was the fact that I was ordered to remain at Fort Henry and send the expedition up the Tennessee River under command of Maj.-Gen. C. F. Smith. This was ordered because General Halleck received no report from me for near two weeks after the fall of Fort Donelson. The same thing occurred with me. * * * I was not receiving the orders, but knowing my duties was reporting daily and, when anything occurred to make it necessary, two or three times a day. When I was ordered to remain behind it was the cause of much astonishment among the troops of my command and also a disappointment. When I was again ordered to join them they showed, I believe, heartfelt joy.

"I never allowed a word of contradiction to go out from my headquarters, thinking this the best course. I know, though I do not like to speak of myself, that General Halleck would regard this army badly off if I was relieved. Not but what there are generals with it abundantly able to command, but because it would leave inexperienced officers senior in rank. You need not fear but what I will come out triumphantly. I am pulling no wires, as political generals do, to advance myself. I have no future ambitions. My object is to carry on my part of this war successfully, and I am perfectly willing that others may make all the glory they can out of it."

General McClellan, on Halleck's recommendation, ordered that Grant should be relieved from duty and investigation made. He even authorized Grant's arrest. This, within two weeks of his great victory that electrified the country. Grant's explanation of delays in receiving dispatches, his visit to Nashville, etc., reached Halleck, and Grant was restored to his command on March 13th, Halleck claiming his explanation to Washington had exonerated Grant, but he did not inform Grant that his whole trouble came from his (Halleck's) misleading reports to Washington.

Grant proceeded immediately to Savannah, Tenn., where he found Gen. C. F. Smith in command, sick, and who soon died.

General Grant says, of the condition of the South after the

fall of Donelson, that his opinion was and still is that the way was open for the national forces to occupy any part of the Southwest without much resistance. If one general had been in command of all the forces west of the Alleghenies, who could have taken the responsibility, he could have moved to Chattanooga, Memphis, Corinth and Vicksburg, and with the troops pouring in from the North, he could have kept all these places, leaving his army to operate against any body of the enemy that could have been concentrated in his front. Rapid movement, with the occupation of the enemy's territory, would have discouraged a large number of young men who had gone from that territory into the rebel army, and brought them back, and we would have permanently held that territory that cost so many lives to conquer later, but our delays gave courage to the enemy, and they collected new armies, fortified their positions and twice afterward came near making their line on the Ohio River.

SHILOH.

No campaign or battle of Grant's has received such unjust and severe criticism as the battle of Shiloh, but as we now read the official reports of that battle, we see that at night, on the first day of the battle, Grant was master of the field, with Wallace's division of 5,000 fresh troops that had not fired a gun; that the enemy were exhausted and demoralized and had no reinforcements, and, as Grant claims, he would have whipped them the second day without the aid of Buell. The fact is from the very moment of attack on the second morning Beauregard, who was in command after the death of Albert Sidney Johnston, commenced retreating, and fell back to Corinth, and Grant, if he had not been restrained by orders, would have within a week had his forces facing Corinth, less than twenty miles away. The one mistake made by Grant at Shiloh was in not intrenching his forces as they arrived from day to day, on the general line of defense. Grant admits this, but says it was his purpose to proceed immediately against the enemy at Corinth he did not think it necessary, and it never entered his mind that the enemy would attack him. Besides, these troops were mostly green, and needed drilling and discipline more than they did experience with pick and shovel, and Grant also says that there was no hour during the day when he doubted the eventual defeat of the enemy.

In the first day's battle the forces on each side were about equal. Grant says that up to Shiloh he believed the rebellion would collapse suddenly, as soon as a decisive victory could be gained, and after such victories as the capture of Donelson, the fall of Bowling Green, Nashville (with its immense amount of stores), Columbia, Hickman, opening the Tennessee and Cumberland from mouth to head, he believed peace would come. After this, when Confederate armies were collected, and new lines of defense from Chattanooga to Corinth and Knoxville and on to the Atlantic, were formed, and they took the offensive, he gave up all idea of saving the Union except by complete conquest. Up to this time he had protected property and citizens; after this he pursued the plan of consuming and destroying everything that could be used to support and supply armies, and this policy he pursued to the end of the war.

Grant never made a report of the battle of Shiloh, as Buell, who commanded the Army of the Ohio, refused to make reports to him. A few days later General Halleck arrived at Pittsburg Landing and assumed command, and Grant was placed second in command and ignored. Halleck had three armies: the Ohio, Buell commanding; the Army of the Mississippi, Pope commanding, and the Army of the Tennessee, Grant's old command, which Gen. George H. Thomas was assigned to the command of. There was no time after the battle of Shiloh but that the enemy would have retreated from Corinth had a movement been made against it. Beauregard had about 50,000 men in Corinth, while against him were 100,000, and any of the three armies could have planted itself on his communications and forced him to fight in the open or retreat. Grant suggested to Halleck such a move by the left, but says he was silenced so quickly that he thought probably he had suggested an unmilitary movement. Logan, who commanded a brigade, on the 28th day of May told Grant the enemy had been evacuating several days, and if they would let him he could go into Corinth with his brigade. Beauregard published his orders for and evacuated on the 26th of May, and our army entered on the 30th, the enemy not leaving a thing, not even a sick or wounded soldier. Even after they had left, Halleck issued orders on the 30th of May for a battle, and had his whole army drawn up in line to meet the enemy. The army was greatly disappointed at the result. Grant says he was satisfied Corinth could have been captured

in a two days' campaign, made immediately after Shiloh, without any additional reinforcements, and that after Corinth they had a movable force of 80,000 men, besides sufficient force for holding all territory acquired in any campaign. New Orleans and Baton Rouge were ours, and the enemy had only a single line of railroad from Vicksburg to Richmond, and in one move we had the opportunity to occupy Vicksburg and Atlanta without much opposition, but we continued to pursue the policy of distributing this great army, and for nearly a year accomplished no great results from it, giving up the territory back to Nashville, holding only the line from the Tennessee River to Memphis.

General Grant's position at Corinth, with a nominal command, became so unbearable that he asked permission of Halleck to move his headquarters to Memphis. He had asked to be relieved from a command under Halleck, but Sherman prevailed upon him to stay. On June 21, 1862, he moved to Memphis. On July 11th, Halleck was placed in command of all the armies at Washington, and Grant returned to Corinth, and in July, 1862, was given only the command of the District of West Tennessee, which embraced West Tennessee and Kentucky west of the Cumberland.

As one reads the reports and makes comparisons—first Grant fighting at every opportunity, winning every battle, pleading to move on the enemy after every battle, but stopped, humiliated after each campaign, and finally when given a command only allowed a district; while on the other hand Halleck, who had not fought a battle, who took fifty-five days or more with two men to the enemy's one to make twenty miles, which by a simple flank movement could have been accomplished in two days, with one of the best opportunities of the war to capture or destroy an army of 50,000 men—Halleck, who prevented Grant from reaping the full benefit of every battle he fought, is brought to Washington and given full command of all the armies, while Grant was not even allowed to resume command of the department he vacated,—the record is most astonishing. Halleck had no confidence in Grant. The officers in the field looked on in amazement, and wondered what the powers in Washington could be thinking about. Grant accepted whatever was given him, never making a word of protest or complaint. He was now again in position to commence moving on the enemy, and although Halleck's great army had been distributed, Grant had

left in his command 50,000 troops, and commenced preparing for another movement, not even suggesting that more force be sent him. There was facing him an army of about 40,000 men under Van Dorn, and Grant with his numerous posts and large territory could not muster more than 20,000 men for an aggressive army. He says that his most anxious period during the war was the time that he was guarding all this territory until he was reinforced and took the aggressive.

On August 2d, Grant was ordered to live upon the country, upon the resources of citizens hostile to the Government, to handle Confederates within our lines without gloves, impoverish them and expel them from our lines. Grant did not see the necessity of this, and says he does not recollect having arrested or imprisoned a citizen during the entire rebellion.

During this time, with his inferior force, Grant sent two divisions to Buell and one to Rosecrans at Corinth.

Van Dorn, who commanded the rebel army in Grant's front, soon saw how small a force Grant had, and decided to attack him. He brought Price's army across the Mississippi River, and both combined and moved on Grant's lines. Grant moved to Jackson himself, so he could be in close touch with his force and where, by the railway from Jackson to Grand Junction and Jackson to Corinth, he could reinforce the point attacked more readily. Price immediately moved on Iuka, and Grant saw a chance to defeat and capture him, and went immediately to Glendale, sending Rosecrans' force from Corinth to the rear of Price, and General Ord to head him off. A portion of Rosecrans' force fought Price near Iuka, but Ord did not know or hear of the battle, although the order was if either force was attacked to notify the other. There were two roads leading out of Iuka to the south, and Rosecrans was ordered to take possession of both, but failed to occupy the easterly one, and during the night Price retreated on this road, avoiding both Rosecrans and Ord. Van Dorn and Price combined their forces southwest of Corinth, and moved immediately on that place. As soon as Grant ascertained this he ordered Hurlbut with all the force he had to move from Memphis and get in Van Dorn's rear, and started McPherson with a division from Jackson to reinforce Rosecrans. Van Dorn commenced his attack on Corinth on October 2d. Rosecrans had pushed his second division out nearly three miles from Corinth, and allowed the attack to fall upon this division, which was steadily pushed back during the day until

it finally reached the inside works at Corinth, fighting very gallantly at every one of the lines of defense. On the second day Van Dorn and Price had Corinth practically invested, and a very severe battle ensued, both sides fighting with great gallantry and great loss. Van Dorn and Price were completely defeated, and their army retreated completely demoralized, and should have been relentlessly followed, and their trains and artillery captured, and, although Grant urged this in dispatch after dispatch, for some reason there were delays, and when the troops did follow them they took the wrong road, which enabled the enemy to escape, although Hurlbut's and Ord's forces captured portions of their trains and artillery.

Grant criticises Rosecrans severely for his movements in these battles, and censures him for failing to capture Price at Iuka, and to follow Van Dorn after Corinth. There were many protests from McPherson, Hurlbut and other officers, who were ordered to aid Rosecrans in these battles, and these protests especially related to his reports.

Mrs. Grant, who was present with General Grant at Jackson, stated that these officers appealed to her in the matter, and in her talk with General Grant he was disinclined to relieve Rosecrans. While the matter was under discussion, on October 23, 1862, the War Department assigned Rosecrans to the command of the Army of the Cumberland. Mrs. Grant says when Grant received the dispatch he came out of the tent holding it in his hands, and declared that his greatest trouble had been solved. Grant says in relation to Rosecrans that as a subordinate he found that he could not make him do as he wished, and had finally determined to relieve him from duty if he had not received this assignment, and that he was greatly pleased at his being assigned to the command of the Army of the Cumberland, believing that perhaps in such a position he would be more efficient and useful than he was as a subordinate.

Grant up to this time had only been commanding the District of the Tennessee, but still had in his command 50,000 men. The authorities at Washington still seemed disinclined to give him the command he was entitled to, but on October 25, 1862, he was placed in command of the Army and Department of the Tennessee.

At the time of the battle of Corinth I was in command of the fourth division, District of West Tennessee, and was rebuilding the railway from Columbus to Corinth. I had just made the

connection at Humboldt, and had been several days at the front giving personal attention to the work. I received a dispatch from General Quimby, my commanding officer, directing me to report immediately at Corinth for orders. I was away from my own headquarters in a working undress suit; had nothing with me and hesitated about going as I was, but I concluded it was best to report, so took the train, and at Jackson, Tenn., Col. John A. Rawlins came to the train and asked if I was on board. I made myself known to him, and he informed me that General Grant was out on the platform and desired to see me. I apologized to Colonel Rawlins, stating that I was not in proper condition for presenting myself to the commanding officer. He saw my predicament, and said: "Oh! we know all about you; don't mind that." I stepped out on the platform. General Grant met me, shook me cordially by the hand, and I then saw that he was no better dressed than I was, which greatly relieved me. In a few words General Grant informed me that he had assigned me to the command of the Second Division of the Army of the Tennessee at Corinth, and quietly, but with a determination that struck me so forcibly that I could make no answer, said: "And I want you to understand that you are not going to command a division of cowards." General Rosecrans, in his official report of the battle of Corinth, had branded the men as cowards, and General Grant had disapproved his action and comments. The division won imperishable renown. Upon its banner was inscribed "First at Donelson," and from that time until after the Atlanta campaign they served directly under me. From Corinth until the end of the war they took no step backward. Their great battle of Atlanta, where they held a whole corps of Hood's army, and afterwards Altoona, when, under General Corse, they held that strategic point against the terrific onslaughts of four times their number, gave me cause to always remember the words of General Grant.

Grant's first plan of campaign against Vicksburg was for Sherman with 30,000 men to go down the Mississippi River by boat and attack Vicksburg from the Yazoo side, while Grant attacked Pemberton and his army, then at Granada, and if Pemberton retreated, follow him to the gates of Vicksburg. Gen. J. E. Johnston soon saw the danger of this combined attack of Grant and Sherman on Vicksburg, and immediately ordered a movement of General Van Dorn and all his cavalry,

together with the forces of Generals Jackson and Forrest, from Middle Tennessee upon Grant's communications, to force the abandonment of Grant's advance.

At the same time the force I commanded at Corinth was to move down the Mobile and Ohio road towards Meridian for the purpose of protecting that flank, and hold what force I could in my front. On December 9th, Grant wired me that Jackson's cavalry, some 3,000 men, he thought, was starting to my rear, and again on December 13th, to take such force as could be spared, and, with troops at Jackson and those in the field, attack Forrest and drive him across the Tennessee. The Ohio Brigade, under Colonel Fuller, struck Forrest at Park's Cross Roads, whipped him, captured 400 prisoners and all his artillery, and by January 7th, Forrest had been driven across the Tennessee, and Jackson had been driven south of the Tallehatchie, and I reported in the following dispatch:

"Had gunboats come up the river at the time requested, or had General Davies been allowed even a transport with a piece or two of artillery to come and destroy the flats, we should have captured the rebel (Forrest's) force on this side of the river. As it was, they had several hard knocks before they escaped. Captured four cannon and 600 prisoners."

On December 20th, Van Dorn attacked Holly Springs where were stored all of Grant's supplies. Colonel Murphy, who commanded this post and had plenty of troops to defend it, surrendered without firing a gun. This combination of Johnston's and the surrender of Holly Springs forced Grant to retreat to the line of the Mobile and Ohio road, and allowed Pemberton to move to Vicksburg and defeated Sherman's attack upon that point.

This is the first, and, I believe, only case where a campaign was defeated and two separate armies forced to retreat by a cavalry raid, one going down the Mississippi River to Vicksburg, and the other toward Vicksburg by way of Granada, and was the first time Grant ever abandoned a campaign. As he fell back he lived off the country, and finding his army was so easily fed he said that if he had had the experience before he would have left his base of supplies and pushed on to Vicksburg, living off the country, holding or defeating Pemberton, and preventing him from reaching Vicksburg before Sherman could have taken it. After this time Grant and all the armies he commanded followed this policy, obtaining their

rations by living off the country when necessary. Especially was this the case in his campaign in the rear of Vicksburg, which immediately followed after the defeat at Holly Springs.

After the defeat of Sherman and the loss of Holly Springs, Grant determined to move his whole command down the Mississippi River, leaving me in command at Corinth to cover his left flank, and preventing any portion of Bragg's Army from reaching the Mississippi River, or, in fact, making a lodgement west of the Tennessee.

GRANT ON THE VICKSBURG CAMPAIGN.

As soon as Grant moved down the Mississippi, and placed his army on the levees, he had determined in his own mind that bold campaign to the south and rear of Vicksburg. Knowing he could not make it until the waters fell in April or May, he utilized time and kept his troops busy in several plans for passing Vicksburg, or by using the Yazoo tributaries to make a landing to the north and east of Vicksburg. He had very little faith in these projects, although they tended to confuse the enemy and mislead them as to his real plan of campaign. He kept his own counsels as to this plan, knowing it would receive no support in Washington, but probably draw forth an order prohibiting it, and also receive criticism from all military sources, as the plan was an absolute violation of all the rules and practices of war, as it virtually placed his entire command at the mercy of the enemy, cutting loose from all the bases of support and supply, and that he must take with him all the rations and ammunition he would use in the campaign. Nevertheless, he never hesitated, though urged to abandon it by some of his ablest generals. Grant says he was induced to adopt the plan, first, on account of the political situation, which was threatening, the anti-war element having carried the Congressional elections, and the Confederates were forcing our troops as far North as when the war commenced; that, to abandon his campaign and return to Memphis, the nearest point from which he could make the campaign by land and have a base and railroad to supply it, would be very disheartening to the Government and the people. Grant ran the batteries and landed his forces on the east side of the Mississippi River, and faced the enemy with less men than they had, and in the entire campaign, when he planted himself in the rear of

Vicksburg, he had only 43,000 men while the enemy had 60,000. In comparison as to boldness, the total ignoring of all former practices of warfare, the accepting of the probability of nine chances of failure to one of success, this campaign has never been approached in its originality and the wonderful grasp of its possibilities and great fighting success. Viewing it from this standpoint, it cannot be compared to any other known campaign. After Vicksburg, the Confederacy was doomed, and Gettysburg coming at the same time, lifted the nation from the slough of despondency to the highest point of hope, enthusiasm and certainty of success.

As soon as this campaign was over, Grant wished to move immediately on Mobile, but that fatal policy that had formerly scattered a great army and relieved Grant of his command, was renewed here. He lay quiet, his great abilities unutilized, until the disaster at Chicamauga forced the Government to again use him to retrieve our misfortune, and again snatch victory out of a threatening disaster.

Right after the Vicksburg campaign General Grant proposed occupying the Rio Grande frontier, because the French had entered Mexico, and to use immediately the rest of his army to capture Mobile, and move on Montgomery and Selma, Alabama and perhaps Atlanta, Georgia, using the Alabama River from Mobile to supply his column, but again his great victorious army was scattered. Parke, with the 9th Corps, was returned to East Tennessee, and Sherman, with the 15th Corps, was started from Memphis to march along the Memphis and Charleston Railway to the Tennessee River, and up that river slowly, evidently for the purpose of being in position to aid Rosecrans in his campaign against Bragg.

CHATTANOOGA.

Right after the battle of Chicamauga and the concentration of the Army of the Cumberland in Chattanooga, the dispatches of the Assistant Secretary of War, Charles A. Dana, who was in Chattanooga, greatly alarmed the authorities in Washington, and at a conference it was decided to at once place that army in General Grant's command, and the Military Division of the Mississippi was organized, which virtually included all the territory west of the Alleghenies. General Grant was placed in command of it, and proceeded immediately to Chattanooga.

In ten days he placed a starving army on a safe basis, had opened its cracker line, and was forming his plans to attack Bragg. Sherman, who was marching from the Mississippi east, was ordered to drop everything and move to Chattanooga. Sherman had commanded the 15th Army Corps, but now took command of the Army of the Tennessee, and moved rapidly east with the 15th Army Corps, then commanded by Frank P. Blair, and the left wing of the 16th Corps, commanded by Dodge. On November 5th, Grant ordered Sherman to leave Dodge's command at Athens, Alabama, to rebuild the Nashville and Decatur Road, which he said was necessary for him to have to feed his army. He said in his letter: "It is not my intention to leave any part of your army to guard roads, and particularly not Dodge, who has kept continuously on such work."

There was a combination of circumstances at Chattanooga that rendered it necessary for Grant to fight at once. As Longstreet had left Bragg's front for the purpose of whipping Burnside at Knoxville, the authorities in Washington were greatly disturbed at the fear of losing East Tennessee, which was almost unanimously Union in its sentiment, and dispatches were continually coming to Grant from Washington to go to the aid of Burnside. Grant's answer was that he would fight as soon as Sherman got up, and that would in effect relieve Burnside. On November 21st, Grant wired to Halleck: "I have never felt such restlessness before as I have at the condition of the Army of the Cumberland." Sherman reached Chattanooga himself on November 17th, his force arrived on November 26th, and the battle was immediately fought.

Grant's plan of the battle was well considered and made out before Sherman's arrival. His principal attack was to be made by Sherman on Tunnel Hill, Bragg's right flank, in order to force Bragg to weaken his center, and, if possible, for Sherman to capture and hold the railroad in Bragg's rear, and force him either to weaken his lines or lose his communications with his base at Cleveland Station. Hooker was to perform a like service on our right (the enemy's left), and force his way from Lookout Valley to Chattanooga Creek and Rossville, forming a line there across the ridge, facing south, thus threatening the enemy's rear on that flank. Thomas, with the largest army, the Cumberland, was to assault in the center, while the enemy was engaged with most of his forces defending his two flanks, but Thomas was not to assault until Hooker reached

and formed at Rossville. After the first day's operation Grant sent this dispatch to Washington. "Fight to-day progressed favorably. Sherman carried the end of Missionary Ridge and his right is now at the Tunnel and his left at Chattanooga Creek. Troops from Lookout Valley carried the point of the mountain, and now hold the eastern slope and a point high up. Hooker reports 2,000 prisoners taken, besides which a small number have fallen into our hands from Missionary Ridge." Mr. Lincoln replied: "Your dispatches as to fighting on Monday and Tuesday are here. Well done. Many thanks to all. Remember Burnside." The next morning at daylight Sherman attacked. Grant had reinforced him with Howard's Corps coming from Hooker. Hooker carried Lookout, moved to his position, and finally Thomas' army moved against the center, carrying everything before it, and won a victory, whereas thirty days before the Government was considering how to extricate the Army of the Cumberland from the clutches of Bragg. Grant pursued to Ringgold, where the Iowa troops suffered terribly in an unnecessary assault, as in a couple of hours the enemy would have been flanked out of the position. The victory at Chattanooga was won against great odds, considering the advantage the enemy had in position and intrenchments. Bragg made several grave mistakes. First, in sending away his ablest corps commander, Longstreet, with 20,000 men, to attack Burnside at Knoxville. Second, in sending away a division of troops on the eve of battle. Third, in placing so large a force on the plain in front of his impregnable intrenchments and position.

I have heard it said that this battle was fought by the men without orders or plan, but General Grant said to me that in all the battles he had fought this one followed more closely his plans and original orders than any other.

Right in the midst of the battle Lincoln wired Grant not to forget Burnside. Grant wired: "I will start Granger this evening to Burnside's relief."

Grant followed the enemy to Ringgold, and stayed over night at Graysville with Sherman, and returned to Chattanooga on the evening of the 28th. He says: "I found Granger had not got off, nor would he have the number of men I had directed. He moved with reluctance and complaint, and I therefore determined, notwithstanding the fact that two divisions of Sherman's army had marched from Memphis and gone

into battle immediately on their arrival at Chattanooga, to send him with his command, and also gave him Howard with his 11th Corps. Granger's order was to accompany him." Sherman's troops were not fit to make this march to Knoxville. They were without clothes, shoes, blankets or overcoats.

Sherman's movement with Howard and Granger's corps of the Army of the Cumberland saved Knoxville, as Longstreet had invested it. Sherman proposed to Burnside that Longstreet should be driven out of Tennessee, but Burnside thought he could do it without using Sherman's force. He thought that Longstreet would either get out of East Tennessee, or return to Bragg's army, but was mistaken, and this mistake caused a great deal of trouble, and was one of the main reasons of preventing Grant's comprehensive campaign for the winter. Longstreet remained in East Tennessee until spring and was the cause of continual anxiety in Washington and at Knoxville. Grant said that it was a great mistake, and greatly regretted that he did not insist upon their fighting Longstreet, and forcing him to retreat from East Tennessee when the movement was first made.

As soon as the Chattanooga and Knoxville campaigns were completed, General Grant wrote Halleck that they could not make a winter campaign south of Chattanooga on account of the difficulty of the mountain region and the rainy season, and to utilize his large force he proposed to gather up a sufficient force and move by the Mississippi River to New Orleans, and then to Mobile, and attack or invest that place, capture it, and then move into Alabama, and perhaps Georgia—a very feasible operation. as he could have water communication to Selma and Montgomery. Sherman was to move from Vicksburg with 5,000 men from Hurlbut's command, and McPherson's 17th Corps, then stationed at or near Vicksburg, east to Meridian, destroying the railroads and gathering all stock and supplies that the enemy could use.

On December 21, 1863, I was called to Nashville to meet Generals Grant and Sherman in relation to the part my command was to take in this combined movement. I was to take my corps, the troops at Corinth, and in connection with Gen. W. S. Smith's command of 10,000 cavalry, sweep the Tennessee Valley, then to Tombigbee Valley, in Mississippi, destroy all railroads there, then to Corinth, and then to Decatur, Ala. All stock and supplies were to be taken that could be utilized, the

intention being that the commands of Sherman and myself should destroy the railroads and take the products of the country, so that no considerable force of the enemy could remain long in West and Middle Tennessee and Mississippi.

The fear of Lincoln and Halleck that Bragg might recover and retake Chattanooga if Grant's army was moved from there, and the anxiety of Lincoln and Stanton for East Tennessee while Longstreet remained there, though General Foster, who commanded East Tennessee, had more troops than Longstreet, caused the abandonment of all this campaign except Sherman's movement from Vicksburg to Meridian. On December 27th, Grant started for Knoxville, telegraphing Washington he would force a battle in East Tennessee as soon as he arrived. Thus for the fourth time magnificent armies, competent to go anywhere, under the most competent commander, were dispersed and scattered, and during the whole winter virtually accomplished nothing.

December 20, 1863, Grant moved his headquarters to Nashville, and prepared his force for the spring campaign. He expected to make the campaign to Atlanta himself, and then to Mobile, if it had not already been taken, then to Savannah. Much contention has arisen as to who first suggested the move to Mobile and Savannah. There is no doubt Grant had it in his plans for his spring campaign which he expected to make in 1864. Whether he had indicated it to any one I do not know. However, Sherman evidently had it in mind as soon as the Atlanta campaign fell upon him, and probably both of them considered it a proper campaign to make, and Sherman made it with Grant's approval.

From early in the Rebellion Grant had been impressed with the idea that active and continuous operations of all the troops that could be brought into the field, regardless of season or weather, was the proper course to pursue. The armies in the East and West acted independently and without concert, like a balky team, no two pulling together, enabling the enemy to use to great advantage his interior lines of communications to reinforce the army most vigorously pressed, and to furlough a large number during the season of inactivity to go to their homes and work in putting in crops to be used for the support of their armies. Grant says that he therefore determined as soon as he was in command of all the armies, first—to use the greatest number of troops possible against the armed force of the enemy,

preventing him from using the same force at different seasons against first one and then another of our armies. Second—to hammer continuously against the armed force of the enemy and his resources until there should be nothing left of him.

Our experience proved how prophetic were Grant's recommendations and the results. Had his advice been followed in each of his great campaigns and his great victorious army on each occasion been held intact and used as he suggested, instead of being partially disbanded or lying in idleness, the war in the West would have been ended in 1862 or 1863. After Donelson, Grant said, there was nothing to prevent the combining of his own and Buell's army and moving to the line of the Memphis & Charleston Railway, using the Tennessee River as its base, and proceeding to the capture of Vicksburg and opening the Mississippi River. This was in 1862.

After Shiloh, Halleck's army of 100,000 men could have been used, and in sixty days Vicksburg would have fallen and the Mississippi would have been open, but Buell with his army moved east and finally fell back to the Cumberland River, from which he started, while the rest of Halleck's army was scattered over territory, accomplishing nothing.

After Vicksburg, Grant had 70,000 men, with whom he could have moved on Mobile, captured it, and by use of the Alabama River penetrated to Atlanta, but Parke was sent to East Tennessee with the 9th Corps, Sherman with the 15th Corps spent the summer moving from Memphis to Chattanooga, while A. J. Smith, with two divisions of the 16th Corps, went to Banks and was not utilized again until the fall of 1864.

After Chattanooga, Grant planned to move 30,000 men of that army to Mobile, and with the forces on the Mississippi take that city and penetrate to Atlanta by way of the Alabama River, while the rest of the army swept North Mississippi and West Tennessee and destroyed the communications so it could not be again occupied by a Confederate army. All these plans showed a mind and foresight that stamped him as a great general. If any of these plans had been carried out at the time they would have eliminated the Confederate army from the Western country, and made possible a concentration of the army against the Confederate forces in the East.

Before Grant assumed command of all the armies, there was promulgated a maxim of war that two battles by two different armies should not be fought at one time. An officer

of the highest rank and largest command, in commenting on this, said if our Western armies engaged all their forces at the same time it would leave them without a single reserve to stem the effect of possible disaster. This policy, of course, allowed the enemy, holding the interior lines, the opportunity to reinforce any one of its armies, and at all times bring an equal or superior force against any one of our armies. Grant's plans were the reverse of this, and his orders to all our armies were to move on the enemy at the same time and keep them busy, and prevent any one of the rebel armies from reinforcing the other, and it was this policy that so depleted the enemy's forces that within a year they were defeated and could not muster force enough to stop the movement of any one of our armies, and this brought peace.

Grant's four years' experience at West Point, and the acquaintances there formed, and in the Mexican War, gave him a knowledge of the officers on both sides in the Civil War, and while many people clothed Lee and Johnston with almost superhuman ability, Grant says he knew they were mortal, and it was just as well he felt this.

General Grant, in discussing the criticisms upon him, said: "Twenty years after the close of the most stupendous war ever known we have writers who profess devotion to the nation trying to prove that the nation's forces were not victorious. Probably they say we were slashed around from Donelson to Vicksburg and Chattanooga, and in the East, Gettysburg to Appomattox, when the physical rebellion gave out from sheer exhaustion. I would like to see truthful history written, and history will do full credit to the courage, endurance and soldierly ability of the American citizen, no matter what section of the country he hailed from, or in what ranks he fought."

Speaking of those who opposed our country during the war, Grant gave this opinion: "The man who obstructs a war in which his nation is engaged, no matter whether right or wrong, occupies no enviable place in life or history. The most charitable posthumous history the stay-at-home traitor can hope for is oblivion."

It would be impossible for me to close my sketch of General Grant without paying a just tribute to the one who was so much with and to him, and to us, but whose work we do not see recorded in the war reports or the history of Grant in his official work in civil life. I speak of his devoted wife, Julia

Dent Grant. After every campaign she visited General Grant, and was welcomed by every one in his command. She had a kindly, gracious way that captured us. The officers who had annoyances and grievances they could not take to the General and his staff appealed to Mrs. Grant. She was very diplomatic and knew which to consider, and which she could not take up with the General, and many an officer could thank her for interceding and straightening out his grievances. We went to her with great confidence in what she could do, although she always asserted that she had no influence in army matters. I noticed none of us were ever concerned about or censured for our appeals to Mrs. Grant, and there is no soldier who did not love to see her with the army, and did not regret her departure. During Grant's administration, his troubles and his sickness, she was always the same. She straightened out many little contentions, and a suggestion to the General often pointed the way to settle many little annoyances. After General Grant's death I saw much of her, and was charmed with the great number of incidents she had stored away and her great memory for what had happened. At our army reunions we always had a word from her and sent her our greetings, and they were happy mile-stones in her life. Many happy hours I have spent with her as she recalled many of the events in the General's life, and his old comrades always received a hearty welcome from her. The nation will never know how much it is indebted to her loyal devotion and good advice, and it is a pleasing fact to record that in his own home General Grant was uneasy and discontented when Mrs. Grant was away. He was devoted and loyal to her, and his last request that she be laid at his side, no matter where they placed him, was worthy of the great man, as well as due to his devoted helpmate. The hold she had, not only on her own country, but on all others, was shown by the universal mourning at her death, and the great respect shown her as we laid her by the side of the General at Riverside.

In civil life as President, General Grant laid down the policies that the country maintains to-day on all great questions: the maintenance of the Monroe Doctrine, the settlement of all disputes by arbitration, the currency, gold standard, the upbuilding of the navy, the policy in the West Indies, acquisition of foreign territory, retirement of greenbacks until paid out for gold, and the education of our people, upon which nothing more

clear than his speech at Des Moines, Ia., has ever been uttered. It has always been an enigma to me to hear people speak of General Grant and say he was a great soldier but a failure in civil life, for his standing throughout the world is as high or higher for his acts as a civilian as for the great victories of the Civil War. Grant as a statesman was the same as he was when a soldier. When we were living in a camp and not on a campaign it was hard to get a reply to a letter or dispatch, or get any comfort from him, but the moment he got on his horse to lead a campaign it seemed as though he anticipated all events. His judgment seemed infallible, his decision was made instantly, and the answer to a letter or dispatch was ready the moment he read it. He never hesitated; he never was ambiguous. Any person receiving a letter from him did not have to ask a second time for an explanation, and he greatly objected to receiving dispatches showing indecision and expressing doubts during a campaign. To the subordinates he trusted he gave great latitude, and seemed to have the utmost confidence in their success. His orders stated what he wanted done, leaving to them all details, invariably saying if they needed help he would support them.

After the war it was my good fortune to be thrown with Grant a good deal, and I was associated with him in some of his enterprises, such as the railway from the City of Mexico to the Pacific Ocean, and it was impossible for me to meet him as I did and not comprehend that he was in civil life as in military life, of that peculiar make-up which could let small matters go without attention, but in any crisis would rise to command it. He was so modest and so simple that his greatness was absolutely forced upon one from his very acts. Nevertheless, so far no critic in this nation, or in any other, has been able to write a word against his military course or civil life which carried strength enough to be mentioned a second time. Grant's greatness was admitted long before he left our shores, and, although a simple citizen, he was honored as no one ever was before, and his simplicity astonished the world. Some critics of General Grant have said that during the war he absorbed from others many of his great qualities as a soldier, but no one can read the war records without seeing that the strength of his dispatches and orders, the boldness of his plans, his fearless attack of superior numbers and

his decisive victories in the early part of the war were equal, if not superior, to those of the last year of the war.

The great distinguishing qualities of General Grant were truth, courage, modesty, generosity and loyalty. He was loyal to every work and every cause in which he was engaged; to his friends, his family, his country, and his God, and it was these characteristics which bound to him with hoops of steel all those who served with him. He gave to others honors and praise to which he was himself entitled. No officer served under him who did not understand this. I was a young man, and given much larger commands than my rank entitled me to. Grant never failed to encourage me by giving me credit for whatever I did, or tried to do. If I failed he assumed the responsibility; if I succeeded he recommended me for promotion. He always looked at the intention of those who served under him, as well as to their acts. If they failed, he dropped them so quickly and effectually that the whole country could see and hear their fall.



COMBINED MANEUVERS OF THE REGULAR ARMY AND ORGANIZED MILITIA.

BY COLONEL ARTHUR L. WAGNER, GENERAL STAFF U. S. A.

FROM the earliest periods of recorded history we find armies trained in peace for the work of war; for it is a self-evident fact that, given anything like an equality of morale, armament and leadership, that army will be victorious in war whose peace training has approached most nearly to the conditions of actual conflict. Josephus said of the Roman army, at the time of its highest efficiency, that its drills were like bloodless battles, and that its battles were like bloody drills. But in the days when tactics was principally of the nature of masses applied in shock, when missile weapons were crude and of insignificant range, and infantry and cavalry, both relying on "cold steel," constituted the only arms, the tactical problem was one of comparative simplicity, and drill approached so closely to tactics that the two subjects were practically identical. With the introduction of firearms a change began; with each successive development of fire-power the tactical problem has become more complex; the faint line of demarkation between drill and tactics has broadened into a deep boundary of separation; and it is now perhaps possible to find regiments renowned for the beauty and precision of their drill whose tactical knowledge is so limited that they would be of but little value on the field of battle.

The present system of field maneuvers, which has for its essential feature as close an approximation as possible to the conditions of actual war, owes its origin to the Prussian King, Frederick William I, the father of Frederick the Great. This sovereign, known as "the drill-master of Europe," noted for his harshness and eccentricities and for his fondness for tall soldiers and military precision, was a man of hard practical military sense. He recognized that it was not sufficient that his army could maneuver more rapidly and accurately than any other troops in Europe, and that they could load and fire with a rapidity exceeding that of any possible adversaries, but that their proper training required that they should acquire in time

of peace as complete a familiarity as possible with the conditions of actual war. He instituted the first autumn maneuvers, and his troops became accustomed to facing a supposed enemy under the conditions of battle and to the methods of attack and defense according to the circumstances in which they found themselves. To them there was nothing in the sights and sounds of battle that was novel, save the one important and dismal feature of killed and wounded. Frederick received from his father the heritage of the most perfect army that human prevision and persistent effort could create, and with what skill he used the magnificent weapon thus placed in his hands history attests. It is a significant fact that Frederick, after passing through the first and second Silesian wars and emerging victoriously from the agonies of the Seven Years' War; after winning on fields of carnage the title of "the Great;" after enrolling his name on the small list of the world's greatest commanders by his deeds in stern, bitter, and mighty conflict, gave the greatest care and most earnest attention to the "mimicry of war" known as autumn maneuvers. He was plain and severe in his comments to a degree that would be impossible for any umpire not protected by the divinity which doth hedge a king. Of the maneuvers of 1785, Brackenbury says:

"During the autumn maneuvers in Silesia the year before, Frederick had been greatly disappointed at the want of tactical knowledge displayed by some of the generals, who had committed exactly the same faults that we see at autumn maneuvers now. In a letter to General von Tauentzien, the same who had defended Breslau so well against Loudon and who was now Inspector-General of Silesia, the king spoke very sharply: 'Were I to make shoemakers or tailors into generals the regiments could not be worse.' One regiment, he said, was not fit to be the poorest militia battalion; in another, the men were so spoiled by smuggling that they had no resemblance to soldiers; whilst a third was like a heap of undrilled boors. As for tactics, 'Schwartz, at Neisse, made the unpardonable mistake of not sufficiently occupying the height on the left wing.' One can imagine him thinking of Hochkirch and the Stromberg. 'Had it been serious the battle had been lost. At Breslau, Erlach, instead of covering the arm by seizing the heights, marched off with his division straight as a row of cabbages into that defile, whereby, had it been real war, the enemy's cavalry would have cut down our infantry and the fight been lost. It is not my purpose to lose battles by the base conduct of my generals; wherefore I hereby appoint that you next year, if I be alive, assemble the army between Breslau and Ohlau, and for four days before I arrive in your camp carefully maneuver with the ignorant generals and teach them what their duty is. Regiment von Arnim and garrison regiment von Kanitz are to act as enemy; and whoever does not then fulfill his duty shall be brought before a court-martial; for I should think it shame of any country to keep such people who

trouble themselves so little about their business. Erlach will remain four weeks longer in arrest. You are to make known this my present declared will to your whole inspection.' This specimen of Frederick's dealing with inefficient officers may serve to show how terribly in earnest he was, and, to some extent also, why the Prussian Army was then, and has since been, so tremendous a weapon in the hand of those who have known how to use it."

After the death of Frederick, the form of the training of the Prussian army remained, but its master spirit was gone; pedantry had succeeded genius and conservatism was content with self-copying; and we find the Prussian Army in 1806, anachronistic and decadent in its methods, unable to cope with the vigorous and practical tactics of Napoleon.

Probably the most complete regeneration of a nation that has ever been seen was that of Prussia under the influence of the crushing defeat of Jena; and most marked among the features of the new and vigorous Prussian national life was the training of the army. In this training the annual maneuvers constituted a marked figure. They were, apparently, not looked upon with any degree of admiration or appreciation by the rest of Europe; but when Prussia, after fifty years of peace, springing into the lists against Austria, a larger nation possessing a larger army and having the experience of two great wars within the preceding seventeen years, crushed her antagonist in a dazzling campaign of only six weeks' duration, the nations of Europe turned their attention earnestly to the Prussian military system. This was emphasized when, four years later, France, until then recognized as the first military power of Europe, sank quickly under the well-directed and powerful blows of her German adversary. Not only were the organization and training of the victorious Prussians carefully studied, but the system of maneuvers was adopted by all the military nations of Europe. "Barrack yard drills" were no longer deemed sufficient, and it was recognized that the highest efficiency of an army demanded its training in the duties of war and its handling in the assimilated conditions of conflict.

In the United States, the first systematic instruction in tactics, in contradistinction to mere drill, was introduced at the Infantry and Cavalry School at Fort Leavenworth, Kan. The forces employed at that post never consisted of more than a regiment of infantry, a squadron of cavalry and a single battery of field artillery; and from the nature of things the instruction did not rise to the dignity of maneuvers, but par-

took, rather, of the character of a series of small tactical problems. It is interesting to note that many of the officers who, as students at the Infantry and Cavalry School, received this instruction have since served in the Spanish and Philippine wars, and it has been remarked by many of them that they found this instruction more valuable to them in actual service than any other that they had received in time of peace. The system of practical tactical instruction introduced at Fort Leavenworth was afterward adopted at the Cavalry and Field Artillery School at Fort Riley, Kan., where the garrison consisted, as the name of the school implies, of cavalry and artillery alone; though, on at least one occasion, namely, in 1896, the garrison was temporarily increased for the purpose of maneuvers by the addition of a battalion of the sixth Infantry, which marched over from Fort Leavenworth. At Chilocco, Indian Territory, in 1889, General Merritt assembled a command, consisting of two regiments of cavalry, fourteen companies of infantry, and two batteries of field artillery, in a camp of instruction, in which a series of tactical problems was carried out. Similar tactical training was introduced at a number of our different posts, but with the exception of these small beginnings, there was but little systematic practical instruction in tactics in the United States before the Spanish War. In the days when the majority of our officers received the valuable actual experience afforded by Indian campaigns, this tactical training, though always valuable, was not so necessary; but this practical war experience had ceased, and the number of officers who had been schooled in the Great War and in subsequent campaigns on "the frontier" was steadily diminishing.

At Fort Riley, in 1902, about 6,000 regulars and militia were assembled under command of Major-Gen. John C. Bates, U. S. Army, in the first real maneuver camp, in the full sense of the term, that was ever held in the United States. The maneuvers on this occasion consisted of a number of tactical problems, most of them being of a somewhat elementary nature, but at least three of them being on a scale and of a kind that furnished a true indication of the development of the system of maneuvers. The rules for the conduct of the maneuvers at Fort Riley, in 1902, were drawn up by a board of officers which assembled in Omaha, and which took as its basis the regulations that had been used at the schools at Fort Leavenworth and Fort Riley, with the addition of such rules

in use in foreign maneuvers as could be readily adapted to our somewhat different conditions. The maneuvers at Fort Riley, in 1902, were highly successful. The interest aroused on the part of officers and men was very great, and it was noted with much satisfaction that the officers who displayed the most zeal in these maneuvers and performed the best duty therein were mainly those officers who had recently had actual experience in war.

In 1903, two large maneuver camps were established, one at West Point, Ky., where the maneuvers lasted from the 28th day of September to the 13th day of October; inclusive, and another at Fort Riley, Kan., where the maneuvers began on the 16th day of October and ended on the 30th day of the same month. Each of these camps was under the command of Maj.-Gen. John C. Bates, U. S. A. The maneuvers in 1903 marked a decided step in advance of those held in the preceding year. The rules for the conduct of the maneuvers that had been in use at Fort Riley in 1902 were amended and further amplified for the use of the maneuvers at West Point, Ky., and these regulations were still further changed for use in the maneuvers at Fort Riley, which immediately followed. The maneuvers thus far had partaken rather of the nature of camps of instruction than of maneuvers in accordance with the European system. In fact, each of these camps has been not inaptly termed "a military Chautauqua," for, in addition to the tactical training, there were lectures on different military subjects, object lessons in field fortification and the construction of military bridges, and drills of brigades and regiments. The maneuvers at West Point, Ky., consisted of a series of advance-guard and rear-guard problems, the attack and defense of outposts, the contact of opposing forces, and the attack and defense of a fortified position. Those at Fort Riley were similar in nature and included also the attack and defense of a convoy, and a night march and an attack at dawn. The maneuvers were instructive and highly successful.

In 1902, the maneuvers were held on the military reservation at Fort Riley, which was found altogether inadequate. In the following year, land was rented at West Point, Ky., and certain land, in addition to the reservation at Fort Riley, was secured, so that the maneuver area in each case embraced, in round numbers, about 30,000 acres. The increased area thus acquired was of great military advantage, but it was still too

restricted to permit of ideal maneuvers, in which two forces, operating from points a number of days' march distant, could carry out strategical operations introducing tactical instruction as an incident to a general plan; if, indeed, we can apply the term "incident" to the really most important feature of the maneuvers. It was necessary, under the circumstances, to assemble the troops in a single encampment, and in the different problems to send out one of the forces to a distance, to begin operations from a position that it was assumed to have reached as a result of certain imaginary strategical conditions. One objection to this lay in the fact that the command remaining in camp could obtain by inference a pretty accurate idea of the strength of the force opposed to it. But in this respect alone did these maneuvers differ materially from those held more recently. The initiative of the commanders was given the fullest scope, and neither had, in any maneuver, the slightest knowledge of the nature of the problem given to his opponent. As an evidence of this, it is, perhaps, sufficient to state that on one occasion two opposing commanders at West Point, Ky., in beginning the maneuver, marched forward each expecting to find his opponent in a defensive position, whereas the two forces met in an unexpected *combat de rencontre*. In one case, a commander having his force in camp at night, with outposts thrown out, expecting merely an outpost exercise, received orders, long after dark, to make a night march and attack at dawn a similar command in camp whose outposts had no idea that any attack was contemplated until the enemy actually appeared at daybreak. Every organization received instruction in outpost duty, the instruction frequently lasting from one day to another. I should not deem it necessary to mention these facts had not a recent article in a popular magazine contained remarks calculated to convey an erroneous impression in regard to the very successful maneuvers in Kentucky and Kansas last year.

As a result of the experience at West Point and Fort Riley, the chief umpire at those maneuvers advocated the assembling of the forces in two camps during the entire maneuvers, the force in one camp to be permanently designated as the Blue and that in the other camp as the Brown, the headquarters of the main force, with its proper guard, to be encamped at some central point and to be in telephonic and telegraphic communication with both camps. He stated: "In this manner more extended

exercises than those carried out this year would be practicable. In a tactical problem each force could move at once to its object, instead of having to proceed from camp to another point and assume that its operations started from some place other than its actual rendezvous, and each force could be kept in a greater degree of uncertainty in regard to the probable location and strength of its opponent than was possible under the conditions that have existed in the maneuvers heretofore." This plan was adopted at the Ohio State encampment at Athens, Ohio, last August. In this encampment the two brigades composing the division were in separate camps about six miles apart; the camp of the division commander, Maj.-Gen. Charles Dick, Ohio National Guard, being at a conveniently located point about midway between the two camps. In addition to the State troops assembled at this encampment there were two battalions of regular infantry, two troops of regular cavalry, and two regular field batteries encamped with each brigade. Eight regular officers, varying in rank from colonel to captain, were assigned by the War Department for duty as umpires at the Athens encampment. The maneuvers at the Ohio encampment were remarkably good and far exceeded the expectations of the most sanguine. The officers and men of the militia entered upon their duties with zeal and enthusiasm, to such an extent indeed that the review, which is an indispensable feature of every encampment, was held on Sunday in order that time might be gained for an additional maneuver. In this encampment the regular troops were under their own commander, Colonel Duggan, the detachments at the two brigade encampments being under the command of Lieutenant-Colonel Fountain, 4th Cavalry, and Lieutenant-Colonel Yeatman, 27th Infantry. As there was no legal provision for placing regular officers under militia commanders the difficulty was obviated by having the regular organizations co-operate with the militia exactly as the contingents of an allied army would do in an actual campaign—as, in fact, they really did in the Crimea and in China. The result of the maneuvers at Athens was highly gratifying, not only on account of the earnestness of the militia officers and the rapidity with which they learned, but also as an indication of the great use that can be made of such camps in preparing the militia for the more extended maneuvers in combination with the regular army. At the Ohio State encampment, it was noted with much interest that the Eighth Ohio

Infantry, which had been at the West Point maneuvers the year before, demonstrated immediately its superiority and efficiency, though before the close of the encampment the difference between the regiments was much less marked. The experience of the Eighth Ohio in this respect is simply an exemplification of the old adage, "Practice makes perfect."

At American Lake, in Washington, maneuvers were held in the month of July, the troops consisting of a division composed of two brigades under the command of Brig.-Gen. Frederick Funston, U. S. A. In this case also the brigades were in separate encampments, the headquarters of the division commander being at a central point. The force engaged in the maneuvers aggregated 4,011 officers and men, of which number 1,687 were regulars and 2,324 militia. The militia was from the States of Oregon, Washington and Idaho. Maneuvers were also held at Atascadero, Cal., the force engaged consisting of a division under the command of Maj.-Gen. Arthur MacArthur, U. S. A. The division, which was composed of two brigades, was in a single encampment, as at the maneuvers of 1903. The strength of the division was 4,428 officers and men, of which number 2,247 were regulars and 2,181 militia. The problems at American Lake and Aatascadero were similar to those at West Point and Fort Riley the year before. The maneuvers on the Pacific slope were highly satisfactory.

At Manassas, Va., in September, were held the largest and, in some respects, the most successful, maneuvers that have yet been seen in this country. The proposed plan of two encampments, which had been adopted at the Athens and American Lake maneuvers, was here carried out also. The force, under the command of Maj.-Gen. H. C. Corbin, U. S. A., numbered 5,062 regulars, and 21,234 militia, being the largest military force assembled in the United States since the close of the Spanish War. The Blue division, under Brig.-Gen. F. D. Grant, U. S. A., was encamped at Manassas; the Brown division, under Brig.-Gen. J. Franklin Bell, U. S. A., at Thoroughfare, about thirteen miles distant; and the corps headquarters were established at Gainesville, a point nearly midway between the two camps. An interesting and most valuable feature of this encampment consisted of two sustained maneuvers, each of two days' duration, the troops bivouacking on the field and resuming the operations on the following morning. It is not the intention here to give any detailed description of the maneuvers

at Manassas. They have already been reported in outline in the various service journals, and a detailed report is now in preparation by the General Staff. I will merely remark here that they were highly successful; that in some important features they marked a distinct advance on all previous encampments and that incidentally they demonstrated not only what we can copy and continue in the future, but certain defects which we should avoid if we are to continue to profit by our own experience. These matters will be touched upon incidentally in discussing the general subject.

The maneuvers in the United States have many essential points of difference from those conducted in Europe. There is much that we can learn from the European maneuvers; there are many things that we can adopt from them, and still more that we can adapt, but we must work out by our own process of evolution a system suited to the needs of our own military personnel. In Europe the troops receive, in large garrisons, extended tactical training which but few of our regular garrisons receive, and which is quite out of the question for our militia at its home stations. As a result of the conditions existing in Europe, the maneuvers there are mainly for the instruction of officers of high rank in the duties of actual field command. With us, however, the instruction must extend from the highest officers to the private soldiers; for in the militia especially, the opportunities for field instruction are limited necessarily to their State encampments or to combined maneuvers. It is essential that the militia should possess a certain amount of training, in order that the maneuvers may not be restricted to mere elementary exercises as the only alternative to plunging the state troops at once into waters beyond their depth. The criticism was made at the maneuvers in 1903, that so far as some of the militia organizations were concerned, it was like placing a lad in a university before he had finished his course of common-school studies. It is within the power of the General Government to exact certain requirements of the militia as an indispensable condition to their participating in combined maneuvers; and it may be stated as an axiom that it is a waste of public money to transport troops a long distance and at a great expense for the purpose of learning things that they can acquire equally well by going a short distance at a slight expense. No militia organization should be invited to participate in the combined maneuvers unless it has received instruction

not only in ordinary company, battalion and regimental drills, but in guard duty, the service of security and information and extended order formation. All ordinary drill can be learned by the militia organizations at their home stations; extended order drill, guard duty, and the essential principles of the service of security and information can be learned in the state encampments. Officers of the Regular Army detailed as inspectors of the militia, or, better still, as umpires at state camps for maneuvers, should report certain organizations as "qualified for maneuvers." This method would insure at the combined maneuvers troops properly qualified for instruction there to be given. It would also serve another useful end, inasmuch as it would place an official stamp of approval on the efficiency of the militia organizations thus reported.

Any person who has participated in the different maneuvers thus far held in this country, or who has been present as an interested spectator, cannot have failed to notice that one of the crying needs in our maneuvers is a greater number of umpires than we have yet had. There were at Manassas fifty-one umpires, consisting of a chief umpire at corps headquarters, and a senior umpire, and twenty-four assistants assigned to each division encampment. A body of fifty-one officers seems to constitute a considerable force of umpires; but considering the fact that the operations cover a very considerable terrain, and that everything has to be noted that pertains to the question of the efficiency of the commands under observation, it is not sufficient for two divisions of troops. I frequently heard during the maneuvers the complaint, not only on the part of the umpires, but also of the officers in command of troops, that there were not umpires enough; and very often, owing to this scarcity, a critical situation had to be determined by an umpire who arrived at the point too late to realize from his own observation the actual condition of affairs. There should be, at the very least, one umpire for each regiment of infantry, squadron of cavalry and battery of artillery. If practicable, the number of umpires should be so increased as to permit the assignment of one to each battalion of infantry and troop of cavalry. Though each umpire speaks with the authority of the commanding general, more weight attaches inherently to the decisions of an officer of rank and experience than to one of lower rank and shorter length of service. As far as practicable, the

umpires should, therefore, be field officers, and they should never be below the rank of captain. There is probably no more instructive duty that can be assigned to an officer than that of an umpire at maneuvers, and the greater the number of officers that can be assigned, within reasonable limits, for this duty, the more successful will the maneuvers be and the more will a very valuable kind of instruction be extended throughout the military service.

A comment was recently made by a writer in the *Infantry Journal* that the umpires should be limited to officers of cavalry, field artillery and infantry, the writer objecting to the detail of officers belonging to the permanent staff, to the engineers and to the coast artillery. In reply to this I will merely say that one of the very best umpires that I have ever seen was a captain of engineers, and that an equally good umpire, conspicuous for his ability in this direction, as in many others, is an officer of the coast artillery. In fact, an officer's arm of the service makes no difference, if he understands proper tactical principles and is a man of discretion, coolness, fairness and good judgment. An umpire needs peculiar qualities. It has been well said that he should not be an advocate, but should be a judge; he should be able to decide quickly, and his rapid decisions should have the qualities of manifest fairness and approximate accuracy. It is impossible for an umpire to stop and deliberate and make a mathematical calculation as to probable losses; it is necessary, if the close resemblance to actual warfare is to be attained and maintained, that the decisions should be rendered with the utmost promptness. It is not every officer who is qualified by his temperament to be a good umpire. In this connection I have in mind a certain officer of considerable war experience and of unquestioned military attainments, who is so constituted that he cannot dissociate himself from the command to which he is assigned; he would always speak of "our side" when he referred to the troops to which he was assigned as umpire; his sympathies were so keen that he constituted himself an advocate for the Blue or the Brown—according to the force to which he was assigned—and he could view a situation from one side only. Notwithstanding the undoubted military ability of the officer in question, he is totally unsuited for the duty of an umpire.

At Manassas the experiment was made for the first time of assigning umpires permanently to the two sides and having

them continually accompany the same organization. This had one feature to commend it, inasmuch as the men of the militia organization to which the umpire was attached were inclined to look upon the officer as their military "guide, philosopher and friend," and to seek and receive instruction from him in many military matters. But this one advantage was completely overwhelmed by the disadvantage that the officers quite frequently, and doubtless unconsciously, acquired a spirit of partisanship; many identified themselves completely with the side to which they were attached and, quite unintentionally, perhaps quite unconsciously, assumed the rôle of advocate instead of that of judge.

The experience of this year has demonstrated the desirability of having the troops assigned to two separate and distinct camps, but the umpires should all be at the central encampment; otherwise they are to a great measure beyond the control of the chief umpire in many cases where conference would be beneficial. If they were assembled at the central encampment it would be an easy matter for them to reach the forces with which they are to serve, when directed by the chief umpire. They could be transferred, as occasion might render desirable, from one side to another. They would be available for conference at any time, and the experience of one day could thus be utilized in the exercises given for the day following. They should not be under the control of the division commanders in any way except in the manner provided in the provisional instructions for maneuvers. At the maneuvers at West Point, Ky., and Fort Riley, Kan., last year, the umpires were assembled by the chief umpire on the evening preceding each maneuver. The problem was read and discussed, and the umpires were regularly detailed to the different commands. A forecast was made by the different umpires as to the probable course that events would take in the maneuver, and incidentally many interesting tactical considerations were brought up and discussed. So far as I am concerned personally, I do not know that I have ever learned more at any assemblage of officers than at these meetings of the umpires.

Each umpire should be furnished with a mounted orderly. This is necessary to enable him to mount and dismount and proceed readily on foot to any place where his attention is needed and which he cannot reach while mounted. At the Manassas maneuvers the umpires with the Blue were not pro-

vided with such orderlies, and, as a result, they were in many instances seriously hampered in the performance of their duties.

The umpires are charged not only with the paramount duty of making necessary decisions in the course of the tactical operations, but with keeping a record of the firing, the losses, the fatigue and, in fact, of everything pertaining to the conduct of the various organizations in the course of the day. The duty thus imposed upon each umpire is really more than one man can satisfactorily perform. The journal of the march and the record of the topographical location of the command at various periods should be performed by a lieutenant detailed from each organization and acting under general instructions from the umpire.

The difficulty of umpiring is one that can be appreciated, perhaps, only by those who have undertaken it. Officers participating in the maneuvers form their opinions from the appearance of things as viewed from their own side only, and as their views are often, quite naturally, colored by more or less prejudice, and possibly influenced somewhat by a touch of egotism, inseparable from human nature, it is sometimes found impossible to convince them that the decision of the umpire is correct. In some instances they feel, perhaps, that the umpire is unjust, and in many more they probably think that he is mistaken. They do not always reflect that the same positive, energetic and sincere views that they present to the umpire are not infrequently counterbalanced by equally positive, equally energetic, and equally sincere views from an opposing commander of equally unimpeachable character. In such a case the umpire must depend upon his own observation; or, at any rate, throw his own judgment into the scale and decide accordingly. Not only must the decision often be made under difficult circumstances, and upon the hasty reports of subordinate umpires, but it must be made promptly. An umpire would be more than human if he did not occasionally make mistakes, and he certainly would be less than soldierly if he did not acknowledge them and attempt to rectify them as soon as convinced of his error. The best umpire is not the one who makes no mistakes, but the one who makes the fewest and the least important. If an opportunity is presented for the discussion of the maneuvers, erroneous decisions of umpires can be ascertained, and in a great degree rectified; otherwise mis-

takes made on the field must stand, and all that can be done is to regret them.

Any officer who has served as umpire at maneuvers and who has also had experience in actual war must have been impressed with the fact that in the matter of the preparation of orders, marching, scouting and reconnaissance—in fact, everything up to the moment of contact—can be conducted quite exactly as it would be in actual warfare; but as soon as serious contact is made, artificial conditions arise. It is difficult to maintain the true resemblance to battle; and if great care be not exercised, the step from the sublime to the ridiculous may be short and sudden. Probably the most difficult duty that an umpire has to perform after the opposing forces have effected contact is to keep the troops from pushing forward with undue rapidity, and practically rushing the maneuver in a manner that would be quite impossible in actual battle. The umpire must to a great extent take the place of bullets; he must decide whether the condition of the terrain and the disposition of the troops are such that the attack could be made under the existing conditions, or whether the losses presumably incurred would be such as to compel the force to halt, to take cover, or to fall back. When the umpiring is satisfactory, we find certain portions of the line checked and others consequently compelled to fall back because of the uncovering of their flanks, or from various other causes, and we have very much of the swaying to and fro of the line that occurs in actual combat. The instances are very rare in military history in which an attack has been promptly developed and thrust home without the least delay or check; but this is exactly the condition that we have in maneuvers if the umpires do not efficiently and promptly perform their duties. It is doubtless very exasperating, at least extremely annoying, to an officer to find the advance of his command checked because the organization on his right or left has been ordered back by an umpire; but this is a very slight matter compared with the bitter disappointment that a commander feels in actual operations when his troops are compelled to fall back because they are unsupported by adjoining organizations.

Experiments have been made in different maneuvers in regard to actually falling troops out as killed or wounded. This has certain advantages, inasmuch as the force can see at once the degree to which it is depleted; but it has the serious disadvantage of causing the matter to look too much like play,

and the further disadvantage that the troops thus ruled out lose all further participation in the maneuver. The latter disadvantage is a serious one especially for the militia, as the number of maneuvers in which they participate is very limited, and it is desirable that each individual should get as much experience as possible. At the maneuvers at Manassas the plan was adopted of having no men actually fallen out, but having the umpires carefully note the losses, inform the commanders accordingly, and keep in mind the constructive losses as affecting the morale and the physical power remaining in the organization. Neither plan is altogether satisfactory, but the latter is doubtless the better one.

It would seem desirable, however, to have one day of the maneuvers devoted especially to the work of the hospital corps. To this end the method finally adopted at the last Fort Riley maneuvers, after much careful experiment, seems well adapted. Before the beginning of the day's maneuver a certain number of men in each troop, battery and company were marked with diagnosis tags indicating certain wounds; and when in the course of the maneuvers it became necessary, under tactical conditions, to fall out soldiers as wounded, they were selected from the tagged men. The men thus fallen out remained on the ground and were cared for by the members of the hospital corps according to their supposed wounds. The difficulty experienced in former maneuvers of having the hypothetically wounded remain on the field instead of quietly slipping back to their commands without authority, or straggling back to the rear in a way quite miraculous for disabled soldiers, was obviated by causing it to be known that a hot luncheon and a ride back to camp in ambulances awaited the supposed victims of imaginary bullets. Any person who saw at the Fort Riley maneuvers the practical working of the Medical Department, from the firing-line back to the field hospital, could not fail to be impressed with the value of the instruction, and with the earnestness and efficiency of the hospital corps. In every maneuver first-aid stations, dressing stations and field hospitals should be established; but I think the falling out of the men as wounded should be limited generally to a single day of the operations, and that even a single day should be devoted to this purpose only because of the great value of the instruction thus afforded to the hospital corps.

A table of fire losses has been prepared with extreme care,

but it is very rarely that it can be used. In an artillery duel or in a prolonged fire fight at long range the table can be conveniently used; but generally time does not admit of anything like calculation; the action must be kept moving; "snap judgment" must often be taken, and it is in this regard, perhaps more than in any other, that the experience of an umpire is valuable; for, while a prompt decision is more imperative than an accurate one, the decision should, if possible, be both prompt and accurate.

One most valuable feature of maneuvers lies in the fact that they accustom officers to the employment of troops according to actual conditions, which often cannot be met with definite rules. For instance, nothing is more clearly and indisputably set forth as a *general principle* than that artillery should be used in masses, that its fire should be concentrated, and that it should promptly utilize its superior range against other arms. Yet, while in the open terrain at Fort Riley artillery can be used exactly "according to the books," and good targets can sometimes be made at 6,000 yards, on the other hand, an instance was known in the broken and wooded terrain of West Point, Ky., of an artillery duel beginning at considerably less than 2,000 yards, as the guns of neither force could come into action at a greater distance; and both at West Point and Manassas it happened more than once that batteries even had to be divided as the only alternative to not using the guns at all. It may be said that maneuvers not only keep an officer remembering, but set him to thinking.

Much difficulty has been experienced in determining accurately the objective of the artillery fire. This was first sought by the display of a flag designating by its color the arm upon which the fire was directed. Afterward, two flags with staves of different height were adopted, these flags being placed in a line pointing toward the object. But it has been found that in a broken and wooded terrain even this arrangement is not satisfactory. It is possible that the difficulty may be solved by the use of heliograph signals or flashes from acetylene lamps.

There are always present at maneuvers certain observers who are very ready with their criticisms, but who, perhaps, do not have an opportunity of observing what is done in regard to matters that strike them as absurdities or, perhaps, as impossibilities. I recall a severe and sarcastic comment that was made by an experienced officer who was a spectator at

one of the minor maneuvers at Fort Leavenworth some years ago, in which a force of cavalry charged upon some infantry thoroughly ensconced behind a stone wall and delivering a heavy fire. He was aware that the operation was an absurdity, but it transpired that he did not know that the cavalry had been immediately ruled out of action; nor did he know that in the subsequent discussion the offending commander had been subjected to very severe criticism. Tactical absurdities will occur in a greater or less degree at almost any maneuvers; it may be said, also, that they occur in almost every battle, but in the latter case the offending officer escapes censure if the general result of the action is satisfactory, or, perhaps, receives a brevet for his gallantry, without any comment upon his stupidity. Moreover, the supposed "impossible" movement may be brilliantly possible. When Napoleon, at Samosierra, sent Krazinski's Polish lancers in a headlong charge up the causeway against the Spanish artillery and infantry which swept the pass with an apparently annihilating fire, he performed a tactical feat which might not be judged possible at maneuvers, but which terminated so successfully that it has well been characterized by Napier as "a felicitous example of intuitive genius." If Lord Cardigan had made the charge of the Light Brigade at maneuvers we can well imagine what comments would have been made by any sane umpire. Yet a nation applauded and a poet sang of it in immortal verse that will never be forgotten so long as brave men bear arms.

A comment that I have often heard in regard to maneuvers is that men are allowed to charge over ground under a fire which in actual battle would sweep them out of existence. Now, in point of fact, we know that troops *have* often moved over clear ground under a very heavy fire and that they were *not* swept out of existence. If Pickett's charge at Gettysburg had been made in a maneuver an umpire allowing the command to reach the Federal position would have been subjected to a very severe criticism, yet we know that Pickett did actually reach the position and that the fire did not sweep him out of existence, but that it was the hand-to-hand conflict and counter attack that caused his charge to be unsuccessful. I have, in some instances, permitted infantry to move over ground where I thought the fire was one which in actual warfare they could hardly be expected to endure; but I believed it better to

permit this than to inculcate, possibly, the idea in the minds of the infantry that the moment they are subjected to a serious fire their attack must fail. If, in time of actual warfare, the fire is more than they can endure, they will discover it quickly enough without any preliminary intimidation.

Perhaps the most frequent and most embarrassing question propounded to an umpire is in regard to victory or defeat. Not only the participators but the observers are anxious to know "which side licked." Such decisions should not be made, and there are very cogent reasons for withholding them. In actual warfare the use of bullets frequently produces results that can not be foreseen in maneuvers. A terrain which, generally speaking, is open, may have sufficient undulations to furnish very considerable shelter to a command from a fire which, under a careful but hasty inspection, would seem to have a full sweep. Moreover, the all-important element of morale cannot be taken into consideration. Probably no army ever existed in which the organizations were all of equal morale. Even Cæsar's Army had its conspicuous Tenth Legion, and Napoleon's Army had its Old Guard. It is probable that two armies were never engaged, since warfare was known, under circumstances such that the morale of each was equally high. Yet in maneuvers it is impossible to form an estimate of the relative morale of the opposing forces or of the different organizations of the same force, and even if it were possible the distinctions, if announced, would be very invidious. As a result, the umpires have to proceed on the assumption that all the organizations engaged are of equal and perfect morale, a condition which could not exist in actual warfare, and which would very seriously affect the question of victory or defeat. If the first battle of Bull Run had been a "maneuver," the chief umpire would have been compelled to sound the cessation signal in the close conflict on the Henry House plateau. The Union troops, somewhat intermingled and confused, would have been in good morale; Tyler, who had joined hands, so to speak, with Hunter and Heintzelman, would have presumably been supporting the attack properly; and no disaster would yet have ruled the batteries of Ricketts and Griffin out of action. On the other hand, Evans' brigade would have been ruled out, Bee's and Bartow's brigades would have followed, and it would have been a sagacious umpire indeed who would have awarded the victory to the Confederates. Again, could any umpire

have foreseen the decisive result of Jackson's attack at Chancellorsville? True, the 11th Corps had been routed, but the situation of Jackson's corps when the force of its attack had been spent has been well characterized as a desperate one. Its front and right flank were in the immediate presence of about 25,000 Union troops and its left flank in danger of an assault by Meade and Reynolds with 30,000 more. These troops were all in good morale and under able corps commanders, and no umpire could have foreseen the personal demoralization of Hooker which was the deciding influence in the battle. Torgau looked dismal enough for Frederick before the fortunes of the fight changed; and Marengo at one period of the battle gave very little promise of being one of Napoleon's most brilliant victories. History is replete with examples of commanders who have successfully extricated their armies from apparently hopeless situations, and while it is a very easy matter for the historian to say that General Blank *was* defeated, it would be a totally different matter for an umpire to say that General Blank *would have been* defeated. Moreover, the ablest generals sometimes make mistakes, and there is no commander so great or successful that the history of his exploits does not show that he has committed errors. In the course of a long campaign these errors are remedied and very often when they are made their effect is neutralized by greater errors on the part of his opponent. If, then, victory or defeat were announced in an engagement fought with blank cartridges, not only would it be impossible to make a decision whose justice could not be challenged, but the startling headlines in the daily press would give a maneuver defeat such prominence that it might injure a commander as much in popular estimation as though he had lost an actual battle. I have never seen a maneuver in which I did not have very decided views as to the probable result of the action if war conditions had existed, but the matter is involved with so many possibilities, so many things might happen, so many unforeseen influences might come into play, that I have felt that a positive decision of victory or defeat, without many qualifying conditions, would be at the same time a display of professional arrogance and possibly an irreparable injustice to the commander concerned. All that can be done with justice is to comment upon the plan of a commander as shown by his orders; to criticise the manner in which the plan was executed; to note tactical sins of omission and commission, and to set forth the

conditions existing at the close of the maneuvers, which, from the very nature of things, must be terminated when the opposing troops get into close contact.

A well-trained corps of guides is necessary for maneuvers and for the purpose of providing such a corps, two troops of cavalry should be sent to the maneuver district at least a fortnight before the beginning of the maneuvers and should be made thoroughly familiar with all roads, trails and topographical features, so that each trooper may become a reliable guide. It may be said that in time of war such a corps would not be available. That is true, but in time of war, guides can be impressed and means can be found to make them serve; but the application of "the water cure," for instance, is quite impracticable in time of peace for many reasons even more cogent than those arising from abstract considerations of humanity.

At Fort Riley, Kan., in 1902, and at West Point, Ky., and Fort Riley, Kan., in 1903, each maneuver was followed as soon as practicable by a discussion, to which all the officers of the command were admitted. In this respect our system has varied greatly from that in vogue abroad, and it is believed that it *should* differ from the European plan. In Europe the troops participating in the maneuvers are all trained soldiers; and they have but little to learn in regard to the tactical features, so far as the smaller organizations are concerned, that they cannot reasonably be expected to have acquired in the smaller tactical exercises incidental to their garrison training. It is an easy matter for the commander-in-chief, perhaps the sovereign of the nation, to assemble his highest officers and give them his comments briefly after the conclusion of the maneuvers. Manifestly, this plan would not do for us, for the great mass of our officers who need the instruction would be left out of consideration. At Manassas circumstances rendered it impracticable to assemble the officers for discussion, and much regret has been expressed because such was the case. The object of the discussion is three-fold: In the first place, a large map being provided when the narrative of the operations is read, each officer concerned is enabled to see clearly the part that his organization was performing in the general scheme. He gets, in fact, a brief and clear history of the maneuver. Another advantage gained by this method lies in the fact that errors committed are commented upon, and not

only the officer committing them, but those who hear the criticism, profit by the mistakes that were made; and it may here be stated that it is by the mistakes made at the maneuvers that we learn more than we do by the things that are perfectly performed. Another advantage gained by the discussion is that any statements made in the report of the chief umpire can be at once challenged; that opportunity is offered for explanation and for clearing up doubted points, and that the report of the chief umpire can accordingly be amended so as to make it as nearly accurate as it is possible for a human report to be. At Manassas, discussion being impracticable, a militia officer may have made a mistake on the first day of the maneuvers, may have repeated it on each of the three succeeding days, and may have gone back to his State without being aware that he had made any mistake at all. Where it is not practicable to assemble all the officers for the discussion, it is at least desirable that all general and field officers, and, if possible, company, troop and battery commanders be assembled. At Athens, Ohio, although the two camps were some six miles apart, arrangements were made for special trains to carry the officers of the different camps to the assembly tent at headquarters. I believe that this could generally be arranged, and that the additional expense incurred would be amply repaid by the additional instruction gained by the officers. It is not a sufficient objection to this plan to state that it does not agree with the European system, though, for this matter, the comments of European military attachés seem to imply that they appreciate the superior value of our method. At any rate, our object is to instruct our troops in the most practical way; if it accords with the European conditions, well and good; if it does not agree with such conditions, that should be a matter of no great concern to us, if it properly fulfils the desired object. We should carefully determine what it is desirable to teach, and then proceed with the instruction in the most direct and practical way.

In the course of the maneuvers that I have attended, certain prominent characteristics of the National Guard have strongly impressed me. In the first place, I have observed with much satisfaction their almost universal zeal and desire to learn. Their shortcomings have naturally been those which it is the object of the maneuvers to remedy. In the beginning their officers, as a rule, show but little skill in taking advantage of

the different features of the terrain for tactical purposes, especially in regard to utilizing natural cover; they are too prone to adhere to normal formations; their advance-guard work is over-cautious and their attack generally too precipitate. The fire discipline of the militia has in the main been surprisingly good, but not enough attention has been devoted to the estimation of ranges and the adjustment of sights. I have noticed, however, a marked improvement, from day to day, in these respects in the troops at each of the maneuvers that I have seen. I have observed with much pleasure a marked improvement in the militia in another respect. What the exact source of the Satanic inspiration may be, I do not know; but some young men in the National Guard—relatively few, but positively considerable—seem to think that a camp means a “lark;” that it is soldierly to be tough, and that it is “smart” to rob hen-roosts and apple-orchards. This spirit is happily diminishing rapidly, and at Manassas such depredations were practically unknown. I am confident that the evil can be banished utterly, but I believe that this can best be done by the officers representing the matter in a proper light to their men rather than by resorting to punitive measures. If it be clearly impressed upon the men that they are practically the guests of the people whose homes are in the maneuver district and that they are accordingly under moral obligations to cause the inhabitants no annoyance; that in their conduct, as in their military efficiency, they should not suffer by comparison with the regiments from other States; and that such boyish pranks are regarded by experienced soldiers as mere evidence that the perpetrators are greenhorns or “rookies,” I believe that there will be but little occasion to resort to measures of discipline to check any tendency to mischievous marauding. It is rarely that a suitable appeal to the pride of men is in vain.

The question naturally arises as the one of paramount importance, What is gained by these maneuvers, and do they furnish an adequate return for the great expense incurred? As a reply, I will quote *verbatim* from my report on the maneuvers of 1903:

“There are many things that cannot be learned by the most intelligent and diligent students of books, which are readily acquired in practice on the field. The formulation of orders, the arrangements for marches, scouting and reconnaissance and the deployment of forces for battle can be conducted in peace

maneuvers almost exactly as they would be in the serious business of actual war. On the part of the militia still more is to be learned. I am sure that there was not a National Guard organization present at West Point or Fort Riley that did not leave the encampment with clearer and better ideas of camp sanitation than when it arrived; and this point alone may, perhaps, ultimately repay, to the fullest degree, all the expenses of the maneuvers; for even if the National Guard should not participate as organized bodies in our future conflicts, it is more than probable that if war should come within the next decade most of the militia officers present at the maneuvers would hold commissions as officers of volunteers. If, in the war with Spain, all the volunteer officers or even a considerable portion of them, had known as much about camp sanitation as the militia officers learned at West Point and Fort Riley, the result would have been a great saving of life and a greater efficiency of the commands at Chickamauga and Camp Alger.

"But this is not by any means all that the National Guard learned at these maneuvers. There are innumerable details relative to camps, marches and bivouacs which they learned from their association with regular troops, and this instruction is conveyed, not only more forcibly, but I may say more palatably than if it were imparted by a regular inspector at a State encampment. I have reason to believe that in many cases the wholesome advice and candid criticism of such inspectors have been met with the feeling that the criticism was too exacting, perhaps that it was inconsiderate and faultfinding, and that the things desired, while practicable on the part of regular troops, could not reasonably be expected of militia. In many cases, on the other hand, I believe that regular officers at State encampments have, through a spirit of kindness, politeness, or a desire to avoid hurting the sensitiveness of their hospitable hosts, refrained from making plain criticisms that should have had a wholesome effect. Moreover, in the State encampments, be the militia good, bad or indifferent, it is not stimulated by the consciousness of being superior, nor spurred on by the evidence of being inferior, to other organizations. At the combined encampments the necessity of advice or criticism is reduced to a minimum, for the great majority of militia officers are intelligent and ambitious, and at these encampments they can see for themselves; they can make their own comparisons, see with their own eyes, and judge by their

own common sense how they stand relatively to other organizations—whether Regulars, who have greater opportunities than they to attain military proficiency, or other National Guard organizations which possess no advantages greater than their own. In this connection I recall, with much satisfaction, the excellent condition of the camp of the First Wisconsin, at West Point, which furnished a fine object lesson to all the militia officers who saw it.

"Another great advantage derived by the militia from these maneuvers lies in the fact that the officers and men of the National Guard have strongly impressed upon them the fact that drill, although a most necessary preparation, is, after all, *merely* a preparation for the ultimate duties of a soldier. The necessity of scouting, of varying normal formations according to the condition of the terrain, of utilizing cover, of exercising fire control, and of 'getting there' in the quickest, most sensible and effective manner, was presented to the officers of the National Guard in a way that would have been impossible without practical participation in such maneuvers. I recall with some amusement, not unminged with sympathy, the keen disappointment of a militia regiment in being in a maneuver of considerable proportions and not firing a shot during the entire day. Possibly it occurred to some of these men for the first time in their lives that a regiment may hold an important point and play a necessary part in a general plan of battle without losing a man or killing an enemy. Possibly it was impressed upon them that duty is duty, and that 'they also serve who only stand and wait.'"

The maneuvers give to the officers of the higher grades valuable experience in the command of large bodies of troops under a close approximation to the conditions of actual war; they accustom officers of all ranks to accommodating their tactical dispositions to unforeseen and varied contingencies, and in this respect their value is beyond estimation, for with new troops disaster has rarely been because of a lack of courage, but has often arisen from the bewilderment of inexperienced officers suddenly placed in a novel situation. They teach the men to take care of themselves in camp and on the march and give them a taste of real military conditions; and they give officers of the staff departments valuable experience in field administration, logistics and supply. Everything duly considered and weighed, I have no hesitation in saying that much

is learned at these maneuvers by everybody participating therein, and that in case we should be involved in war it would be found that the experience gained by our officers in maneuvers had been of so much value as to repay the government with heavy interest for the expense incurred.

Carefully considering the experience gained at past maneuvers, the following general features seem desirable in maneuvers in the future:

1. Only those militia organizations should be invited that have been duly declared "qualified for maneuvers." This qualification should embrace a knowledge of company and battalion drills, guard duty and a reasonable degree of preparation in the service of security and information, and extended order formations.

2. The troops at maneuvers should consist of two full divisions, complete in all arms of the service. A smaller force would not furnish the desirable opportunities for command on the part of general officers, and a larger force would, at least for the present, be too cumbersome to admit of the detailed instruction which must be carried out in our militia so as to obtain the full measure of benefit from the maneuvers.

3. The two divisions should be formed into a provisional army corps, but each division should occupy a separate camp, at a distance, if practicable, of at least ten miles from the other. Each camp should be formed and guarded as though it were in close proximity to the enemy. The corps headquarters should be at a separate encampment as nearly as practicable midway between the two divisions. Everything connected with each encampment should approach as closely as possible to the conditions of actual war.

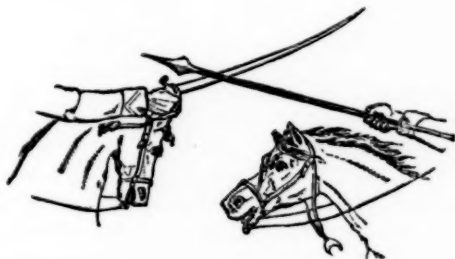
4. There should be an interval of at least one day between the maneuvers, even if such maneuvers be of several days' duration. This time could be utilized in giving the troops a much-needed rest and in enabling the umpires to complete their reports. As soon as practicable after the conclusion of the maneuver, and certainly before the close of the encampment, there should be a discussion of the maneuvers, at which as many officers as practicable should be required to be present. This discussion should embrace a concise narrative of the operations, including the orders of the opposing commanders, and should be followed by the comments of the chief

umpire, after which any officer desiring to make any correction or explanation should be allowed to do so.

5. The umpires should all be encamped at corps headquarters, where they should be under the immediate orders of the chief umpire. They should be on the ground at least two weeks before the beginning of the maneuvers, during which time they should familiarize themselves with the geography and topography of the maneuver area, with the nature of the proposed problems, and with the duties of umpires.

6. It should be remembered that we are engaged in working out a system of practical maneuvers suited to our own needs. We must learn mainly from our own experience. Free comment in proper form should be encouraged on the part of all officers participating in the maneuvers, and no feature thereof should be held too sacred for respectful criticism or comparison with other maneuvers at home or abroad.

I can not better close this paper than with a quotation from a letter that I recently received from an officer whose rank gives weight to his words and whose recognized ability commands respect for his opinions: "We can improve very much upon the European methods of conducting maneuvers. Americans are much more adaptable than Europeans, and much more ingenious in devising new methods. We have shown this in all our wars, and if we apply our ingenuity to the maneuvers in time of peace we can save ourselves many of the disasters of the first months or years of future wars. This kind of experimental science is especially attractive to the American mind, and we can outstrip the Europeans before many years, even if we have to make up our forces from troops who have had less training."



LAND DEFENSE OF SEACOAST FORTIFICATIONS.

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It is only within recent years that the land defense of our seacoast fortifications has received extended study. Our older fortifications made provision against land attack, but since the installation of modern armament, emplaced in concrete constructions, the matter has been held in abeyance. This is partly due to the fact that our resources and energies have been used in providing the armament itself, which is of recent growth, beginning practically in 1890. During the short space of time that has elapsed, upwards of 800 seacoast guns and mortars have been emplaced.

EXTENT AND COST OF OUR MODERN ARMAMENT.

The Chief of Engineers, in his annual report for 1904, cites the following:

"Up to the present time projects for permanent seacoast defenses have been adopted for thirty-one localities in the United States, as follows:

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| 1. Frenchman Bay, Me. | 16. Cape Fear River, N. C. |
| 2. Penobscot River, Me. | 17. Charleston, S. C. |
| 3. Kennebec River, Me. | 18. Port Royal, S. C. |
| 4. Portland, Me. | 19. Savannah, Ga. |
| 5. Portsmouth, N. H. | 20. St. John's River, Fla. |
| 6. Boston, Mass. | 21. Key West, Fla. |
| 7. New Bedford, Mass. | 22. Tampa Bay, Fla. |
| 8. Narragansett Bay, R. I. | 23. Pensacola, Fla. |
| 9. Eastern Entrance to Long Island Sound | 24. Mobile, Ala. |
| 10. New York, N. Y. | 25. New Orleans, La. |
| 11. Delaware River | 26. Galveston, Tex. |
| 12. Baltimore, Md. | 27. San Diego, Cal. |
| 13. Washington, D. C. | 28. San Francisco, Cal. |
| 14. Hampton Roads, Va. | 29. Columbia River. Ore. and Wash. |
| 15. Entrance to Chesapeake Bay at Cape Henry | 30. Puget Sound, Wash. |
| | 31. Lake Champlain |

"In addition to the above localities, the defense of the Great Lakes and the St. Lawrence River is under consideration.

The seacoast defenses of the United States are now somewhat more than 50 per cent. completed. Twenty-five of the

principal harbors of the United States have a sufficient number of heavy guns and mortars mounted to permit an effective defense against naval attack, and during the past four years considerable progress has been made in the installation of an adequate rapid-fire armament, now the matter of first importance.

"Gun and Mortar Batteries. The existing projects for sea-coast defenses comprise 364 heavy guns of 8-inch, 10-inch and 12-inch calibers, 1,296 rapid-fire guns from 2.24-inch to 6-inch caliber, and 524 mortars. The total cost for the engineering work is estimated at \$50,000,000, including what has been completed as well as what remains to be done.

"The appropriations for gun and mortar batteries from 1890 to 1904, inclusive, amount to over \$28,000,000.

"The status of emplacements for which funds have been provided is as follows, at the close of the fiscal year:

	12"	10"	8"	Rapid-fire	12" mortars
Guns mounted.....	93	119a	93b	185c	350
Ready for armament.....	8	8	3	250d	14
Under construction.....	4	6	..	152	12
Total.....	105	133	96	587	376

a. Including original experimental 10" carriage.

b. Twenty-three of these, which have been mounted temporarily, have since been dismounted.

c. One temporarily.

d. Including seventy 6-pounders not requiring permanent emplacements.

At the close of the previous fiscal year there were reported mounted:

12"	10"	8"	Rapid-fire	12" mortars
80	112	89	108	297"

Projects for the defenses for San Juan, Porto Rico; Pearl Harbor and Honolulu Harbor, Hawaii; San Luis d'Apra, Guam, Manila Bay, Subig Bay, have been approved by the Secretary of War, and actual construction should begin thereon at an early day.

In addition to the above, projects for the defense of Cebu and Iloilo, P. I., have been submitted, and projects for defense of our naval coaling stations are under consideration,

It is thus seen that the armament already provided is of immense value, and forms practically a complete defense of our seaports and adjacent cities. The loss in prestige, not to mention the actual loss of armament, would therefore emphasize the great importance of adequate land defense. When

we add to the above the auxiliaries of defense, such as range-finder stations, searchlights and torpedoes, the folly of not thoroughly defending them from land attack is evident.

At the present time sixty-six fire and battery commander stations are in use by the artillery, and seventy-seven are under construction, representing a cost approximating \$500,000. This is but a beginning of our range-finder system.

The torpedo defense is in charge of the artillery arm, and its material, including loading-rooms, storehouses, range stations, presents an aggregate value, when fully equipped, of over three million dollars.

We thus see a sum of over thirty million dollars has been expended in our coast-defense system, and probably as much remains to be expended to complete the system. The defenses are in a high state of efficiency, able to render good service and give excellent account of themselves in any action with the enemy afloat.

The permanent defenses have now reached that degree of completion where the rear defense becomes of paramount importance, and this has been recognized by the War Department, which has now the land defenses of all our seacoast fortifications under consideration. Projects for land defense have already been considered for the most important harbors.

The seacoast fort or battery has a double problem to solve:

- (a) It must fight the enemy's vessels, destroying them if possible.
- (b) It must be defended from land attack in the rear, or from landing parties attacking from any direction.

The discussion of an engagement with the enemy on the water may be omitted, as all our emplacements are designed to give the maximum efficiency in such an engagement.

Our heavy guns can, however, fire only to the front, with a possible fire of the flank guns to 20° behind the line of gun centers, while to the rear they have no fire.

The rapid-fire guns, in which we may include the 6-inch, 5-inch, 4.7-inch and 3-inch in permanent emplacements, have in some special forms of emplacements fire to the rear, but generally we may consider them as limited to front and flank fire with the exception of the 3-inch. All the rapid-fire guns can and should be used in repelling land attack in the directions of their fields of fire.

The guns of greater caliber can not be so considered, as their rate of fire, speed of laying, etc., would preclude their efficient use. For such an attack the rapid-fire guns would be more effective, and should be provided. It may be stated that, in addition to the above rapid-fire guns, the 6-pdr. (2.24-inch) is also considered a gun of the permanent defense. This gun is now provided with a rampart mount; it is, however, the intention to give it a permanent pedestal mount.

In considering the nature and extent of the land attack, several important considerations must be taken into account:

1st. The value of the harbor or city and of the particular fortification in its defense.

2d. The character of the enemy, and his distance from base of supplies.

3d. The characteristics of the coast, as to feasibility of landing, and intermediate territory to be traversed.

The following may be considered as self-evident:

1st. The enemy will not hazard to force the entrance to our harbors in daylight in the face of our present strong fortifications.

2d. He will not engage our batteries for the purposes of combat; if he engages them at all, it will be mainly for purposes of reconnaissance.

3d. He will not engage the batteries at any time except when the odds are greatly in his favor.

4th. His first object will be to capture the batteries and injure the armament beyond use, or else employ them in attacking other batteries, and this will be attempted entirely by land attack.

We thus see that the importance of land defense is as great as the necessity for the permanent defenses themselves.

Let us now ascertain the character of a land attack, involving as it does the number of troops and their equipment. The complement of a first-class battleship is about 700, of a first-class cruiser the same, and of the minor vessels proportionately less. Considering a European fleet, maneuvering in the vicinity of one of our harbors, consisting of 2 battleships, 3 first-class cruisers and about 8 to 12 vessels of minor size, the total complement would be about 6,000 men; of this number half might be available for a sudden dash against the batteries. The enemy, thus numbering about 3,000 men, would proceed, in light-draft torpedo-boats, launches or ship's boats,

under cover of darkness or fog, through unfrequented channels, carefully picking their way over suspected mine fields, and make a landing in the rear of the works, or at some distance on the flanks. In any case, the objective would be to land the greatest number of troops in the safest and most expeditious manner and as close to the works as possible, and then proceed over land to attack and capture the work. The attacking troops would be provided with their own service rifles and in addition would probably land machine, field and rapid-fire guns up to 3-inch caliber, and in exceptional places as heavy a gun as 5-inch or other siege guns. The facilities for landing must in the latter case be exceptionally good.

Having made the landing, attack or capture would be certain unless our batteries were protected by proper land defense, for it cannot be assumed that the artillery personnel of the battery will be able to cope with an attack in the rear as well as continue a fight with the enemy on the water, and this especially if no provisions for immediate rear defense are available.

The character and type of armament which would accompany a determined landing party are shown in Appendix I.

The following data of United States Navy guns are of interest:

The caliber 30 Gatling 10-barrel gun carries two ammunition boxes on the carriage—total number, 1,320 rounds.

The Colt gun carries, 2,000 rounds. These guns have tripod mounts. The limbers carry 12,000 rounds.

The 3-inch rapid-fire field gun, 23-caliber, weighs 400 pounds. Muzzle velocity, 1,250 feet per second. Total weight, with 32 rounds and carriage, is 1,830 pounds. The 3-inch projectiles are shrapnel, thin shell, $\frac{5}{16}$ -inch, cast-iron head, 135 balls, $\frac{1}{4}$ -inch diameter. The bursting charge is 3 ounces and the firing charge is 250 grammes, equal to .55 pounds for 23 caliber. For a 50-caliber the charge is 5. pounds with 2,800 feet per second muzzle velocity.

SMALL ARMS.

The various types are: The German military rifle, .311 caliber; English—the Enfield, .303; French—Mossin, .30; United States—Krag-Jorgensen and Springfield, .30; Japanese—30th year 1900, .256; Russian—3 line 1891, .30.

A comparison of the new Springfield rifle with others is shown in Appendix II.

The protection required against modern Springfield and similar types is as follows:

Sand, $2\frac{1}{2}$ feet.
Earth, $3\frac{1}{4}$ feet.
Soft wood, 5 feet.
Hard wood, $2\frac{1}{2}$ feet.
Wrought iron, $\frac{3}{4}$ inch.
Hardened steel, 5-16 inch.

The characteristics of British field artillery are shown in Appendix III, and of United States field artillery in Appendix IV.

From the tables quoted we note the following characteristic approximate penetrations at muzzle:

Service rifle, caliber 30, 3 feet earth, $2\frac{1}{2}$ feet sand;
United States field gun, 3-inch, model 1898, 4.5-inch steel, 13 feet sand;
United States siege, 5-inch rifle, model 1898, 6.2-inch steel, 18 feet sand.

For calibers over one inch, the relative protections afforded may be taken as follows:

1 of W. I.=5-6 of steel=30 of sand=36 of earth.

It will be seen that for absolute penetrations, unwarranted thickness would be required against field and siege rifles. As, however, these guns are seldom used for direct penetration, but rather for their shell and shrapnel fire, a protection of 6 feet of earth is considered ample; consequently in designing field works 3 feet of earth would be sufficient against small arm fire, and 6 feet against all others.

The above list of guns includes not only the recognized field guns of various navies, but also some of the rapid-fire ship's mounts, which at any time might be utilized for shore service. In addition, the field guns of Great Britain and the United States are also given. It is reasonable to expect that in any serious war the enemy's army guns would be utilized where possible in the land attack of our seacoast defenses.

The effective range of the service rifle may be taken at 1 mile; of the field and rapid-fire guns, at 3 miles, and the siege rifles and howitzers at about 4 miles.

In planning our field works, then, they should be at such distances as to prevent the enemy from occupying positions within ranges of our permanent fortifications, as above given.

As a land attack would hardly be undertaken without field

and rapid-fire guns, we may consider the zone of danger to be generally taken as three miles, and for important harbors or where landing of siege guns is especially favorable, a radius of four miles.

The weight of the 23-caliber United States Navy field piece, 3-inch, with carriage, etc., is 1,830 pounds. Of the United States 5-inch siege rifle without carriage, about 3,630 pounds. Of the British 5-inch howitzer, carriage and limber, 5,040 pounds, and proportionately less for the several parts.

We thus see that the heaviest single weights to be brought ashore would not exceed about 3,600 lbs., an operation which, while almost impossible in certain localities and weather conditions, yet with favorable circumstances one which an enterprising enemy would readily attempt.

The table shown in Appendix IV gives the various United States guns which are available in defense against land attack.

In addition to the above, the following movable guns have been recommended by the Board of Ordnance and Fortification to form part of the coast defense armament, and therefore are peculiarly available in the scheme of land defense:

1. Automatic 1-pounder on wheeled mounts.
2. Semi-automatic rapid-fire guns on mobile broad-tired field carriages of the minimum caliber that will give an effective shrapnel, believed to be not less than $7\frac{1}{2}$ pounds. (For convenience this gun will be designated in this paper as $7\frac{1}{2}$ -pounder.)
3. Caliber .30 automatic machine guns on combined tripod and wheel mounts.

In the scheme of land defense the above field and movable guns may be roughly grouped as follows:

Howitzers, 7-inch B. L.
Siege rifles, 5-inch B. L.
Siege howitzers, 5-inch B. L.
Siege mortars, 3.6-inch B. L.
Field guns, 3-inch, 3.2-inch and 3.6-inch and the new 3-inch Ehrhardt gun.
Semi-automatic, $7\frac{1}{2}$ -pounder.
Automatic machine, caliber .30.

It is manifest that the regular coast artillery will be insufficient to properly care for the land defense. Their time and labor will be taken entirely in looking after the naval attack. In an emergency they must also take part in the immediate defense against attack from the rear.

Our main reliance must, therefore, for the preliminary defense, be placed on the organized militia of the various States, who are fully prepared to act in such an emergency.

The following is from the essay of Col. Edward E. Britton, National Guard, New York, on "The Training of the Organized Militia," published in *THE JOURNAL OF THE MILITARY SERVICE INSTITUTION*, January-February, 1904:

"The returns of the organized militia of the United States for 1902, show the aggregate strength to be 118,259, of which there were Engineers, 1,045; Cavalry, 4,951; Coast Artillery, 2,828; Field Artillery, 4,707; Infantry, 101,537; Signal Corps, 834; Hospital and Ambulance Corps, 1,206. The new militia law contemplates that all of these may, if needed, be ordered into the service of the United States as militia to serve a period not exceeding nine months, within the confines of the United States. But setting aside the fact that the constitutions of some States require the maintenance within the State of a specified number of troops, it would be contrary to public safety to withdraw all the troops from their respective States, where some of them should remain for State purposes.

"In New York State the 13th Regiment Heavy Artillery, nearly 1,200 officers and men, could efficiently handle coast defenses against an enemy at any time. In Massachusetts the 1st Heavy Artillery deserved and received high praise from the United States officers for its work in maneuvers on the New England coast. Connecticut and California are engaged in organizing additional coast artillery forces. Rhode Island, South Carolina, Georgia and Mississippi, have made a good beginning."

The total organized strength, determined by special inspection made in pursuance of General Orders No. 49, April 1, 1903, was as follows:

STATE	STRENGTH	STATE	STRENGTH
*Alabama.....	3,318	**Montana.....	538
**Arizona.....	382	**Nebraska.....	1,588
**Arkansas.....	1,731	**Nevada.....	140
*California.....	3,480	*New Hampshire.....	1,319
**Colorado.....	1,082	*New Jersey.....	4,051
*Connecticut.....	2,572	**New Mexico.....	371
*Delaware.....	389	*New York.....	13,870
*District of Columbia.....	1,294	*North Carolina.....	1,850
*Florida.....	1,201	**North Dakota.....	806
*Georgia.....	4,684	**Ohio.....	5,677
**Idaho.....	449	**Oklahoma Territory.....	874
**Illinois.....	6,669	*Oregon.....	1,262
**Indiana.....	2,297	*Pennsylvania.....	9,068
**Iowa.....	2,364	*Rhode Island.....	1,025
**Kansas.....	1,320	*South Carolina.....	3,692
**Kentucky.....	1,261	**South Dakota.....	1,335
*Louisiana.....	1,498	**Tennessee.....	1,915
*Maine.....	1,158	*Texas.....	3,266
*Maryland.....	2,006	**Utah.....	376
*Massachusetts.....	5,739	**Vermont.....	701
**Michigan.....	3,031	*Virginia.....	2,271
**Minnesota.....	2,026	*Washington.....	822
*Mississippi.....	1,140	**West Virginia.....	1,140
**Missouri.....	3,078	**Wisconsin.....	2,857
		**Wyoming.....	360

 54,258

 Total..... 116,033

*Seacoast, 23 states, 71,665
 **Inland, 26 " 44,368

 116,033

From the above we see that the coast states militia numbers 71,665 and the inland states 44,368. We may assume that the militia from the inland states will not be immediately available, and that only three-fourths of the coast militia will be assigned to coast defense; this would be about 52,000 men, or say about 500 companies, practically all infantry. A portion of these troops would have to act as engineers and cavalry and artillery, not considering the hospital and signal troops required.

Taking one of our large, important harbors, the quota assigned to it may be taken as 5,000 men. Dividing such a harbor into, say, five fortified posts, it is seen that probably 1,000 men, or 10 companies, could be assigned to it. Continuing this theoretic analysis, and assuming an approximate straight coast line in the vicinity of the post, the semi-circle at a distance of 3 miles would be about 10 miles. The 1,000 men being divided into reserve and advance lines, say half and half,

there would be something like 500 men for a front of 10 miles having opposed to them 3,000 of the enemy, a porportion of 1 to 6.

Manifestly such a small number could not cover a line of such extent by uniform intervals. Nor would all parts of the line require the same protection. Since most of our coast defenses are on salient points of the coast, the line of land defense would be much shorter than above given. Due allowance must also be made for natural obstacles, which would further shorten the line of active defense, and which in some cases would allow the advance line to be considerably retired.

Making all the above deductions, it is still apparent that the line would be too long for consecutive occupation.

We therefore must make such a disposition as will effectively prevent the advanced line from being penetrated or driven back. To this end salient positions of the defensive line must be occupied, including important bridges, roads and heights. These positions should be occupied by field works of sufficient size and strength to withstand the probable attack.

For such a line probably four positions to accommodate 80 to 100 men each would be sufficient; this would place them about two miles apart. The positions selected should be such as to cover to the best advantage the intervening ground, as well as to command the approach.

Assuming that the nature of the terrain would allow and require the use of light artillery and cavalry, as well as of infantry and engineers, the total of 1,000 men would be divided approximately as follows:

7 companies of infantry	} Or troops acting as such.
1 troop of cavalry	
1 light battery or company of foot artillery	
1 company of engineers	

Four companies of infantry would be encamped near the entrenched positions ready for immediate occupation. They would have scouts patrolling the line between these positions ready to communicate information at a moment's notice.

The cavalry and light artillery would be encamped in rear of the line. There should be cavalry outposts well in advance of the main line on the coast and along important communications. Where light artillery is not needed, foot artillery may be substituted for manning the various field guns.

The remaining infantry should be encamped near the permanent works for defense of the shore front, flanks and immediate rear defense. The engineers are encamped near the reserve infantry and utilized in repairing roads, bridges, obstructions, field defenses and on demolitions.

The general character of the entrenched positions should now be considered. A closed work would in nearly all cases be undesirable, since rapid ingress and egress are important considerations. Allowing for a vigorous defense by 100 men, and each occupying a front of $1\frac{1}{2}$ yards, the line of parapet would be about 150 yards. If the intervals are about the length of the parapet the perimeter of the position would be about 300 yards.

The parapet should be 4 to 6 feet thick, arranged for infantry fire and provided with suitable platforms for the necessary field guns. The trenches should be located on important sites, but well concealed. The intervals between positions should be covered by infantry lines where approach is possible. These lines, as well as the trenches in the earlier stages, should consist of shallow lying-down trenches, deepened to kneeling or standing trenches where time will permit and where drainage is practicable.

A retired line should be constructed upon similar principles. Parapets should also be thrown up between emplacements along the sea front, and also directly in rear and surrounding all the fortifications.

It will be noted that no regular redoubts are provided for. The results thus far of the Russo-Japanese war show that concealment of positions is only second to their proper location. In the battle of Wa-feng-go on June 16, 1904, described by Mr. Thos. F. Millard, the Japanese field artillery made frightful carnage among the Russians, due to a great extent to lack of concealment on the part of the Russians. The Japanese field guns numbered 108 and the Russian, 64; the range was 3,800 yards, about 2 miles, and within fifteen minutes after the opening of the combat, the Russian guns were completely silenced. From 10,000 to 15,000 shells were thrown by the Japanese, and all by the indirect method, firing from concealed positions.

In the Boer war the Boers made use of deep, narrow trenches, with inconspicuous parapets.

Vertical cover should also be provided, especially for

the men not actually engaged, and this can best be obtained where the terrain will allow by constructing bomb-proofs under the parapets. The works should not only allow of good passive defense, but also for an active offense, and to this end the greatest possible mobility must be provided. Machine guns form a most invaluable aid to the infantry against close attack. The artillery should preferably be in independent positions so as not to draw fire on the infantry. The guns should be well separated, and platforms constructed in all good positions, with connecting communications so that the field guns can be readily moved. Even the heavier siege artillery should not be considered strictly fixed, as to some extent these pieces can be moved when desired, though of course more slowly.

The trenches should generally not be placed directly on the brow of a commanding position, but a short distance below; this conceals the position and prevents a sky line profile.

This entire subject is thoroughly discussed and exemplified in Thuillier's "*Principles of Land Defense.*"

OBSTACLES.

All the obstacles known to the military engineer should be utilized where practicable, but in all cases of emergency and especially where other means are limited, a barbed wire entanglement would be at once the simplest, cheapest and most effective obstacle that can be provided. This material can be purchased in reels of 1,000 feet lengths costing \$12.00 per reel. The lines of wire should be located, where the terrain will allow, at distances of 50 yards in front of all redoubts and field works and trenches, and again at further distances of 200 to 400 yards. The lines should be as high as can be made consistent with concealment and rapidity of construction, and should not be less than three tiers deep. For the advance front of about 10 miles and an interior line of defense of, say, 3 miles, the necessary length of wire for two triple lines will be about 80 miles for the hypothetical harbor under consideration. The intervals between the stakes of the wire obstacles should be covered with small pointed stakes or any other additional obstacles that may be provided.

ARTILLERY.

The number of field guns that would be required in preliminary defense, as above outlined, can only be generally given, but allowing four machine guns and four 1-pounder automatic guns to each position, and six field guns, two machine and two 1-pounders for the general defense, the total number would be about forty-two guns of light field type and smaller calibers, which would cost approximately \$100,000. Siege guns and howitzers should also be added where required. The labor involved in constructing the field works and trenches would be performed by the troops, and the cost would therefore be only for the implements used, which would probably not exceed \$10,000. As the preliminary defenses become completed they should be made of a more permanent character, and additional material obtained to facilitate both defense and offense. Under this head would come prominently the use of searchlights, which would probably cost \$10,000 per light, including complete power and transportation equipment. Plotting rooms, telephones, depots, etc., should also be supplied.

The above general discussion provides for an immediate land defense only, required under great emergency and for defense against sudden attempts to capture the works. Where the attack is to be made by regular siege, or where a large city, depot, or other strategic position is to be defended, the main line must be considerably advanced and the works placed at intervals should be of a more permanent character, but nevertheless give thorough concealment and mobility. For the land defense, which could be provided immediately after the outbreak of hostilities, say within the first two months, no more troops than above considered would probably be available. The importance, therefore, of having some general plan well digested and laid out for each harbor for this preliminary defense, is self-evident. The locations of the lines of defense of the works, nature and number of obstacles and their position, the proper camping places, should all be thoroughly considered and placed on record so that work could be begun almost immediately when required. The inner line of defense which practically surrounds the fortifications at close range should be laid out during peace, and constructed before the advent of war. They should be a part of the permanent defense of the fortress, and, if funds are available, constructed at the same

time. The Russo-Japanese War, especially the attack and siege of Port Arthur, leave no room for doubt that fortifications in the future will be attacked not from the water but entirely by land, and that we can begin none too soon in establishing a complete system of land defense for each of our fortified positions in this country, as well as in our possessions. A preliminary defense as above outlined, therefore, needs a supplemental land defense of permanent value, which should likewise be prepared and completed as far as possible before the outbreak of war.

APPENDIX NO. I.

TYPES OF ARMAMENT AVAILABLE FOR LAND ATTACK.

Type	Wt. of Projectile, lbs.	Diameter of Projectile	Weight of Gun, lbs.	Muz. Vel., ft. sec.	Penetration Wrot- Iron, inches	At Range, yards.
BRITISH.						
12-pdr.	12½	3.0	896	1607	3.2	1000
Hotchkiss 6-pdr.	6	2.24	896	1818	2.8	1000
Nordenfelt 2-bar.	7¾ oz.	1.0	180		.75	200
Gardner 1-bar.	480 grs.	.45	76		.25	100
Maxim 1-bar.	215 grs.	.303	63		.25	100
GERMAN.						
Krupp B. L.	14.9	3.43	986	1545		1000
Krupp B. L.	6.6	2.36	224	1545		1000
Krupp B. L.	8.3	3.19	515	1053		1000
SPANISH.						
Krupp A. F.	6.0	2.24	761	1870		1000
Krupp A. F.	3.3	1.85	515	2330		1000
RUSSIAN.						
12-pdr.	12.0			2700	10.2	Muz.
15½ lb., Mod. 95	15½	3.42		1700		
13½ lb., Mod. 1900	13½	3.00		1950		
ELSWICK.						
37mm.	1.5	1.46	231	2540	5.0	Muz.
47mm.	3.3	1.85	591	2740	7.5	"
57mm.	6.0	2.22	1030	2680	9.0	"
76.2mm.	14.0	3.0	1747	2400	10.4	"
VICKERS.						
37mm.	1.0	1.46	416	1800	1.9	Muz.
3-pdr.	3.3	1.85	616	2800	6.7	"
6-pdr.	6.0	2.24	728	2300	6.2	"
12-pdr. mountain	12.5	2.95	237	918		"
12-pdr. light field	12.5	3.0	448	1700		"
12-pdr. heavy field	17.63	3.0	837	1700		"
U. S. NAVY.						
14.0 lbs., navy	14.0	3.0	1949	3000	13.5	Muz.
JAPANESE.						
11 lbs. Arisaka	11.0	2.95		1660		

APPENDIX NO. II.

COMPARISON OF SPRINGFIELD SMALL ARMS RIFLE WITH OTHERS.

	Springfield Mag.	Krag- Jorgensen U. S.	Mausser 7 mm	German Military Rifle	Russian	Japanese
Caliber, inches	0.30	0.30	0.275	0.311	.30	.256
Rifling:						
No. of grooves	4.	4.	4.	4.		
Depth of grooves, in. . .	0.004	0.004	0.0040	0.004		
Twist, 1 turn in, in. . .	10	10	8.66	0.45		
Weight of bullet, grs. . .	220	220	173	226.82	213	163
Weight of charge, grs. .	43.3	37.6	38.58	41.2		
Weight of complete cartridge, grains. . . .	451.15	438.85	385.63	430.24		
Initial velocity, ft. per second	2300	2000	2200	2145	2000	2300
Remaining velocity at 1000 yards.....	958	901	895	906		
Muzzle energy, ft. lbs. .	2581.6	1952	1857.4	2135		
Striking energy, at 1000 yds., ft. lbs.	447.9	396.2	307.4	413		
Penetration in white pine, at 33 ft. ins. . .	54.7	45.8	50.8	48 app.		
Wt. of rifle, including bayonet and scab- bard, lbs.	9.47	10.64	10.5	11.54	9.75	9.56
Wt. of rifle, including bayonet, scabbard & 100 cartridges, lbs. . .	15.91	16.91	16.18	17.68		
Capacity of magazine, rounds.....	5	5	5	5	5	5
Maximum ordinate of 1000 yd. trajectory, ft.	20.67	25.8	24.47	23.73		

APPENDIX NO. III.

CHARACTERISTICS OF BRITISH FIELD ARTILLERY.

Type	Muzzle Velocity, ft. sec.	Wt. of Shell (Shrapnel) filled and fused.		Balls in Shrapnel	Bursting Charge				No. of Shells per Gun, including Am- munition Wagon.	
		lbs.	oz.		Shrapnel		Common		Shrapnel	Common
Horse Artillery:					lbs.	oz.	lbs.	oz.		
12-pdr. B. L.	1523	12	8	156	0	1½			134	
Field Batteries:										
15-pdr. B. L.	1569	14	0	200	0	1½			142	
5 in. B. L. howitzer	782	50	00				0	15 Lyddite		56
Movable Armament:										
16-pdr. R. M. L.	1355	17	14½	128	0	1½	1	2	72	24
13-pdr. R. M. L.	1505	13	10½	133	0	¾	0	11	108	30
9-pdr.	1330	9	12	63	0	¾	0	8½	72	24
Mountain Batteries:										
2.5-in. R. M. L.	1440	7	10	100	0	¾	0	4	72	24 ring shell
Vickers-Maxim Q. F.:										
1-pdr. Mark II.	1800	1	0					270 gr.		

Type	No. of Shells per Gun, etc. Case Shots	Wt. of Gun Car. and Lim- ber packed.	Length of 50% Zone at Range in Yds. of		
			2000	3000	4000
Horse Artillery: 12-pdr. B. L.	8	3474	24	54	92
Field Batteries: 15-pdr. B. L. 5-in. B. L. howitzer.....	8	4116 5040	23 18	28 27.6	46 38.6 full charge.
Movable Armament: 16-pdr. R. M. L. 13-pdr. R. M. L. 9-pdr. R. M. L.	4 6 4	4728 4200 3797	33 23.25 39	42.7 31.95 61	48.4 38.4 86
Mountain Batteries: 2.5 in. R. M. L.	5		18	18	20

APPENDIX NO. IV.

CHARACTERISTICS OF UNITED STATES FIELD ARTILLERY

Weights, etc.	Mountain		Field								Siege		
	Hotchkiss 1.65 B. L.	Hotchkiss 3 in. B. L.	3 in. B. L. R. Mod. 1898	3.2 in. B. L. R. Mod. 1885.	3.2 in. B. L. R. Mod. 1890 and 1890 1/2 M.	3.2 in. B. L. R. Mod. 1897.	3.6 in. B. L. R. Mod. 1891.	3.6 in. B. L. Mortar Mod. 1890.	5 in. B. L. Howitzer Mod. 1898.	5 in. B. L. Rifle Mod. 90 Mod. '98	7 in. B. L. Howitzer Mod. '90, Mod. '98	7 in. B. L. Mortar Mod. 1892.	
Weight gun, lbs . . .	121	216	835	829	794	830	1200	245	1150	3660	3710	1715	
Length bore, cal. . .	25	13	28	26	25.2	25.2	23.5	5.3	12	3630	3650	7.0	
Wt. proj. filled:													
C. I. shell—lbs. . . .	2	12	15	13.5		13.5	20	20	45	45	105	125	
Case, lbs	2.8	12							45	45	105	125	
Shrapnel, lbs		12	15		13.5	13.5	20	20	45	45	105	125	
C. S. shell, lbs . . .									45	45	105	125	
Charge, s. p., oz. . .	25-16	416	20	18.75	18.75	15.25	23	6	22.4	68	50	28	
Muz. vel. f. s.	1313	885	1725	1685	1685	1685	1550	690	1000	1830	1100	710	
Penetration steel at muzzle, inches . .	1.3	1.5	4.5	3.8	3.8	3.8	3.9	1.2	2.6	6.2	3.8	2.3	

CARDINAL VICES OF THE AMERICAN SOLDIER.

BY MAJOR ROBERT L. BULLARD, U. S. A.

TWENTY-EIGHTH INFANTRY.



UT has he vices?

To speak of him has so long been to sound his praises that now at the mention of his name we have come to expect nothing else. With true appreciation of his virtues and not to make discord on happy occasions I have been wont to join this chorus; yet always with a reservation, a secret intention, on a more fit occasion, of singing him another song, less agreeable though no less true; for, that he has vices, we know who live with him. But I would not drown his praises, because he deserves them, and because, as a mark of our pride and confidence, praise must remain still the surest and best means of drawing from him his best effort. He will do more of whom much is expected. Yet, it would be folly to shut our eyes upon his faults and fail to measure well his vices. In this we need not haggle over small things, but look at those larger characteristic vices of which minor defects are generally but varied manifestations. And,

First. *An abnormal claim, view and development of personal independence; a spirit rebellious and insubordinate to authority.*

In their daily lives, Americans have probably a wider personal liberty than any other people on earth, with a constant tendency to stretch it. They or their fathers quit the Old World to seek, and afterward fought England to keep, or better said, to enlarge it. The people come very near making their own law, and by public opinion also set the measure of how far they shall submit themselves thereto after it is made. However much law, indeed, they may have had put upon the statute books, they have never manifested any disposition to allow themselves to be very much restrained from doing what they please at any time. Their laws, starting with the great Constitution, are made elastic to fit their will. If not elastic, no law, regulation or authority can long stand. Americans are but little conformists, have been and are the least regulated civilized people on earth. Further, the varied resources of our

country have given practically every citizen the opportunity of an independent, self-directed career. Again, in the last half, and especially in the last quarter, of a century, there have come to the people through the workings of politics, unions and societies, great taste, feeling and conceit of personal power that has turned the head of everybody. Add to this that Americans know in their country no grade of society, no class, to belong to which carries with it for the individual the least claim to the deference or respect of his fellows. The practical result of all these has been to inculcate in the man self-will, self-importance, self-paramountness and independence, until now it is his settled view that law, authority, and, in fact, most things else should conform to his will, not he to them; that he, the free American, must not be much bothered with restraints and regulations.

Such is the tradition, such the experience and such the feeling of the American who comes to be a soldier. They make him feel himself independent and above subordination and obedience, they make him chafe under the least exercise of authority, they make him, in short, an awful subject for discipline. He has little or no respect for any authority. It is a vice, a military vice and a vice still, though, I admit, the vice of independence is one at least partially self-compensatory.

On Americans accustomed to American ways, the American soldier's rebelliousness, insubordination and lack of respect toward authority do not easily impress themselves. It is, however, the first thing noticed by foreign observers of our armies and by ourselves the instant we observe foreign armies or even foreigners as soldiers in our own armies. In the Regular Army the truth is brought strongly home to us in another way. Take the best of the post non-commissioned staff officers. It is a veritable roll of honor to us all. To be borne thereon is a warrant of worth, a certificate of excellence proven. It is loaded out of proportion with un-Anglicised German and Irish names. This means that in the long test of soldierly qualities made to determine fitness for these positions, in subordination, obedience, discipline, respect of authority, faithful and efficient service, the Weinbergers and the Wunderlichs, the Dolans and the O'Briens have been found superior to the Williamses and the Johnsons. At the post we see, too, that it is the old sergeant with the brogue who, by discipline, obedience and faithfulness, has proven his worthiness above his comrades

of American breeding and traditions, and to-day, as in the past, still carries the colors of his regiment. Why is it? Is it because Americans do not want these positions? No, the positions are much desired. It is because of a foolish pride of independence which prevents them from yielding the requisite obedience, discipline and faithful service; or, in impatience, they have turned off the road to try a "short cut," and lost sight of the goal entirely.

The hardest struggle in making soldiers of Americans is met in trying to overcome this characteristic fault. In the American view, a man who, no matter for what honorable purpose, has given up control of himself, has disgracefully surrendered his right and character as a freeman. In his enlistment and full submission to military authority, a soldier must do this, and accordingly the soldier and the honorable profession of a soldier are, and always have been, held in contempt by Americans in general. The view is overstrained and wrong; but it is none the less operative, so that out of a mistaken respect for it good men are often kept from the ranks; or if they come, are oftener still, in the fear of doing something unworthy of their manhood, held back from that thorough obedience and submission of will necessary to make a good soldier.

Under the influence of this vice, when aroused the soldier stops at nothing. To "leave," to "quit" any employment on the slightest jar when everything does not go to suit them, is everywhere characteristic of Americans. In this no sort of conditions, agreements or contracts ought in the common view to have, or are allowed to have, any binding effect. It is a right, Americans have come to think, and it is a rule almost without question or exception in the common life of America. The idea comes into the army with all recruits. Under it, "fashed" a little at first by discipline, not well taken hold of by their officers, they are apt to pay no regard whatever to the enlistment oath, but desert in platoons. They have done it in the past and are doing it now. It is for this reason that I have elsewhere advocated at this stage greater personal attention, more careful personal instruction, by the future commander than recruits are to-day in our service accustomed to receive.

But not deserting at this time does not at all mean that the soldier has given up the common American aversion, insubordination and rebelliousness under command. As is well known, a great number of Americans remain rebellious and

impatient of authority to the very end of their soldier days, never really becoming disciplined, obedient soldiers, but, owing to the quality under discussion, ever hoping and trying to dodge the bugbear of their life training, recognition of the authority of any one over them. This spirit of lawlessness has often enough in the last few years shown itself among our soldiers, who, near the time of discharge or just after, on our transports, on railroads and in camps, have defiantly broken and trodden down every rule, regulation and authority and gone riot. It is shown in a lesser degree in the continual movement on re-enlistment of even fairly good soldiers from company to company, from regiment to regiment in the service, in the hope of finding some place where they may soldier without feeling authority, without giving up independence, without having to render obedience to any one.

Not less marked in the officers is this aversion to yielding to authority, to giving up their own way and will. This first step, this essential in soldier-making, they sometimes never take. It is the recent experience of many of us to have seen officers of the United States Army who had been years in the service, by opinion and conduct, nullify over wide regions and render ineffective the settled and well-considered policy of their government, because they were not, in their words, "in sympathy with the government's policy in keeping these islands." This was the development of the vice in their cases. Having seen this, one thinks less harshly of the character of others who, forty years ago, with like views under like conditions, were square and manly and soldierly enough not to remain within our lines, but joined the enemy in the open field.

Second. *Excessive and unnecessary wants: wastefulness.*

In the last three hundred years, with a wastefulness the like of which the world has never before known and can never again know, the people of America have worn out, wasted, consumed, destroyed, a large part of the natural resources of a land whose resources seemed inexhaustible. When we consider this consumption and destruction in two things only, soil and forest, we are appalled. We wonder what we could have done with them and why we did it. In three hundred years we have, it appears, done about as much to exhaust our country as the Chinese have done to exhaust theirs in three thousand.

Simultaneously with, and under all this consumption and

destruction, the American character has shaped itself. Such living could create but one kind of character, one of infinite wants, of insatiable demands, a character that calls for a pound where an ounce would suffice, a rod where a foot would be enough, and wastes the surplus. A Frenchman, it is said, can live on what an American wastes. We are now learning that two Japs or two Chinamen can do likewise, and thereon accomplish as much work as an American. To know our habit we need only to look in at the kitchen of any troop, battery or company at noon to-day. They cook great quantities, eat great quantities, waste great quantities, and the commander cannot deny you that more is eaten than needed, and as much at least wasted as eaten. The same thing runs through every branch of military supply, equipment and labor. Our wants loom before us and appear mighty necessities. To drive a tack we think we need a sledge hammer. If the carpenter wants to saw a board, he demands a whole chest of tools. The quartermaster needs a wheel-barrow and makes requisition for a six-mule team. Our transports feed the fishes of the Pacific with first-class commissaries. The waste and losses of our detachments in the Philippines fed, clothed and equipped half of Aguinaldo's insurgents, and in a way that surpassed their wildest dreams of luxury. The second lieutenant thinks he needs and he wants to carry an array of baggage that would suffice for a brigade headquarters. It was doubtless this that caused the old campaigner, General Crook, preparing for an Indian scout, to exclaim when a lieutenant offered his services: "No, no; I don't want you; I'd rather have a mule."

The effect of all these wants on the army, whether in peace or war, is serious. They mean transportation. Now, there is for any army but one real question to-day. It is transportation; and the excessive personal wants, the careless and customary waste of our officers and men, so pile up impedimenta and multiply the supply of food, clothing, equipage, everything, as to make this a more serious problem with ours than with any other army of its size that has existed in the world up to date. Being used to all this great supply, if he does not receive it, the American feels himself deprived of the last necessities of life, regards himself as disabled, and, so imagining, does in effect seriously lose in efficiency.

This problem of transportation—"We can solve it," we hear declared with confidence. Yes, we always have done so, but

at what cost and pains appal us to think. Russia has always solved it until just now. Our solution has been a simple increase of the means of transportation to the fulness of heart of everybody, till wagons and packs filled the land and transports covered the sea. Always heretofore we could afford to do this, because never heretofore have the United States, single-handed, made war against an enemy even approximately our equal in men, money and resources. This cannot always be so. And, besides, while there seems no limit to the increase of our wants, there is a limit to the bulk of transportation and impedimenta which an army can accumulate and remain effective. At least one of our generals in the Philippines, an experienced soldier, thought that we had gone beyond this limit, and with determination himself took charge of the issue of supplies and the limitation of the means of transportation. The results justified him. He broke the backbone of the insurrection thus; but in the army and in the newspaper the American's dislike of anything that limits him to his real needs still contemptuously pictures the general as a man fallen helpless, loaded to earth under a burden of details. When the participants in the numerous successful expeditions which he planned shall have died all of great old age, when we shall hear no more of the fearful sufferings of having day after day had nothing to wear but the uniform, and nothing to eat but the daily three-pound army ration pieced out with the rice, carabaos, chickens, eggs and bananas which the country afforded, we shall perhaps hear the general's meanness less criticised. With two to three times as much transportation and plunder as in the general's day, the author has since made many small expeditions under like conditions with far greater labor and pains and no whit better results.

In short it is the vice of American soldiers to want and demand more than they need or can use. When as soldiers we shall make the question not how much we want but how little we need, not how much we can manage to carry but how much we can leave behind, we shall be looking at the matter aright and taking the first step in the solution of the only real problem in any war—transportation.

A few paragraphs back we were almost touching another general failing whose gravity puts it in a class by itself. I mean:

Third. *A deficient sense of the seriousness and the obligation of the enlistment oath.*

This is manifested almost wholly in desertions, and this word alone would in fact, be a fit title for this head of my subject. To declare desertion a characteristic vice of the American soldier, is a grievous charge. I am as loth as any to admit its truth, but figures and experience are large enough to compel conviction. At one time or other in his career, probably one in every four soldiers deserts. No less is to be expected; it is the logical result of a general public usage, view and opinion:

1. Because "quitting" at will, "leaving" on the slightest jar, the least dissatisfaction, any employment, is the custom and expectation of all Americans, who look at it as a right, and indignantly resent any questioning thereof—a truth in the knowledge of us all and a condition perhaps daily growing worse.

2. Because the American public look upon the soldier, his uniform and profession, with open contempt—something beyond question.

3. Because desertion, though stamped by law and regulation as a disgrace, a shame, and a crime involving moral turpitude, is not at all any of these in the opinion of the American public, the deserter's fellow-citizens, who think of him only as one who, in the exercise of his right as a freeman, has simply "quit" a job which he does not like, and to which no one has, or ought therefore to have, any right to hold him. They do not, accordingly, wish to see him given up to trial, ostracised or deprived of civil rights. We have seen tens of thousands, on both sides, of the faithful old soldiers of the great war, but who has seen among them a "bounty-jumper" or a deserter? Are they dead? No, the public has never been willing to permit them to be known as such. To the public there was no serious shame in what they did. It was, nevertheless, desertion.

The conditions shame us. The oath alone does not hold.

As to the remedy. It is instruction, given to the individual soldier (because it cannot be given to a whole people, however much they need it), moral suasion most largely at first, because in his impatience under discipline and backed by public opinion, as above described, he is likely to break away, as he is doing right now, under sterner measures. Relying upon his reason

and patriotism, which are good enough when appealed to, show him the folly and the vice for the soldier of these views and habits. Sterner measures properly follow.

Fourth. *Intemperate criticism of superior authority; a loose tongue.*

Their very great personal liberty, the free discussion and unrestrained expression of opinion on all public men and affairs, and, for that matter, on a wide range of private affairs, the habit of setting themselves in judgment on men and measures, have left Americans with the idea that there is nothing and no one that they are not competent and at liberty to criticise. That idea and habit come with the soldier into the military service. Now, civil life and military life are compensations of each other. What the civilian gains in liberty, the soldier must give up in sacrifice. Further, they are antipodal of each other. We must therefore expect that what is eminently proper in one, shall generally be found eminently improper in the other. The free and unrestrained expression of opinion on matters and persons is one of the things to which this remark applies, and this valuable privilege in the civilian becomes an abuse and a vice in the soldier. Now the soldier rarely figures the difference between himself and a civilian, but, while leading a life wholly incompatible with a civilian's ways, in many cases long, and in other cases forever, tries to hold on to a civilian's privileges and habits. On account of the American habit of having a hand in the management of everything, if something be done without considering or consulting him or beyond his observation, that, in general, is enough to awaken doubt or suspicion in his mind, to incur his disapproval and criticism. As in military matters, the theory of execution is exactly this, it may easily be seen what a wide field of criticism is thus opened to the American-bred soldier. He covers it. History is full of examples—it is needless to cite them—and experience is loaded with the results of his work. Every one can call up instances where whole garrisons have been set by the ears, whole commands demoralized and their usefulness destroyed; generals, colonels and other high officers picked up and moved away and commands broken up, in consequence of intemperate comment and criticism. All men can talk, and there seem to be none so low, none so great fools or of so little consequence,

that their words and opinions do not have some influence on some comrade.

It is a vice that affects all grades, but most of all the officer. He is often not simply a good-natured growler, but a bitter "knocker," who spreads all discontent. There are really few of us who plunge ahead doing things. The bulk of us are standing by, handy with our comment, with ready demonstration of the inappropriateness of the methods used, the clumsiness of execution and the insignificance of the results attained by the man who is doing anything. After accomplishment, we are quick to show how much better it could have been done in another way. That finished, we "stand by" still to do the same thing for the next fellow who comes to do something. Indeed, many are thus kept so busy criticising what others do that they find no time to do anything themselves. In matters of honors, advancement and promotion, this habit brings some to the worst stages of demoralization and unreason. For the Regular Army there has been provided a rule of promotion worked out for peace. The rule does not consider the fact that war reverses peace, obscures the prominent and makes prominent the obscure. It disregards the fact that war is the antipodal of peace and that the methods of peace ought not, therefore, logically to be expected to be found suitable in war. It neglects the liveliest spring of human action, reward of merit. Finally, it assumes to hold in abeyance a law of nature, the triumph of the fittest. Now, shutting its eye upon all these things, and upon the further fact that this custom of promotion had already four times been tried and four times been found wanting in as many wars in our history, unrestrained criticism has been howling ruin and demoralization and crying the cause of all inefficiency, dissatisfaction and apathy upon authority which, in a fifth war and its immediate sequences, has found it necessary and expedient, as in the four preceding ones, to depart from that rule.

Nor is the home authority without sin. The law has its maxim, "The King can do no wrong"; the American garrison its axiom, "The Commanding Officer can do no right."

Where this habit comes, duty and discipline wither and fade. Of the many I have seen beset with it, I know just one officer whose efficiency has apparently remained unimpaired by it, and perhaps I have observed him too short a time to be sure.

The cause of so wretched a vice is idleness. Its cure is

therefore simple—work. Give everybody all the military work that he can do (nay, more), and make him do it.

Fifth. *Selfishness, self-seeking.*

I will not lay this fault to the enlisted man. It is not his; it belongs to his officers, high and low, in great things no less than in small. It is an offensive charge, yet true, deny it who may. It is a quality so mean that we must expect general indignant denial; but it is a vice not removable or imputable on words alone, but on acts and conduct. An examination of these in our own ken leaves us with but one conclusion, however disagreeable.

For twenty years our infantry, high and low, cried out for a three-battalion organization. The old organization by companies was condemned and scoffed at, as antiquated and wholly unsuitable. Having observed during those twenty years of struggle, who to-day does not believe or who can deny that there was a general secret hostility and even an active opposition to this reorganization on the part of some other branches of the service that would profit nothing in the promotion that the reorganization proposed? What was this?

In the war the three-battalion organization came. Soon thereafter many who had but recently been crying aloud for this reorganization and who now had received the promotion it brought, proceeded to nullify, as far as in them lay, its real benefits to the service by disregarding it, by ignoring it, or deliberately arranging commands so as to kill the military operation of the three-battalion feature. Now, originally, did these seek the good of the service or the promotion alone in the three-battalion bill?

Again, what, no long time ago, became in later stages, when promotion was largely eliminated, of the numerous partizans of the staff reorganization proposition which, in its earlier stages, seemed to promise so much promotion to so many?

Who has taken any interest in legislation which looked solely to the good of the service without promotion to any one?

Are they many to-day who, in discussing promotion on merit, dwell rather on the rights of the service than on the interests of individuals?

From these suggestions one may draw his own conclusion.

For selfishness and self-seeking there is but one cure—to lay it bare to public contempt.

Sixth. *Contempt of humble things and duties; determination to avoid or throw them off.*

This feeling pervades all Americans, in general to the dislike and neglect of duties and things for which they are really competent. It is but the other end of a lofty conceit, of a feeling that only things of first-rate importance, only the duties of the higher stations, are worthy of their attention. To this is usually added the secret belief, with its consequent dissatisfaction and neglects, that proper appreciation of merit would place them in far higher positions. The house-maid performs her duties without interest, and with only the absolutely necessary efficiency, because she feels herself called to higher things. The laborer dislikes his work because he feels himself superior to it. The cook makes pan-cakes that kill at a hundred yards, because—well, the business isn't worthy of him, and he expects to leave the job before breakfast is over, anyway. The soldier "old soldiers," that is, does time not duty, because that duty is too humble to suit him. The subaltern officer doesn't know how to fire his platoon, but is concerned about how the captain is managing his company. The captain pays little attention to the details of company work, which are in his view really trifling and unworthy of his attention, but he has views about a regiment. The field-officers are intent on strategy, which belongs only to the general. Briefly, the American "has the big head," feels himself above humble duties, positions and means, and has generally arranged in his own mind to throw these off in disgust to assume higher before he has properly fitted himself for even the lower. Ambition is commendable, but not that sort which aspires without earning, not that sort which, in its impatience, unsubmissiveness and unwillingness to do and bear, eliminates the American soldier in the first spurt of his career and has filled even the next higher grade above common soldier with foreign names.

THE FALL MANEUVERS.

BY COLONEL JAMES REGAN, NINTH INFANTRY.



THE combined maneuvers, or the fall maneuvers, have been a success in this country. Especially is this the case with those recently held at Manassas. Their importance is almost unquestioned, and their weakness is lack of time for training and the great expense involved. We do not know the origin of the remark, but it was quite common in the camps, muttered quietly however, that the recent Manassas maneuvers would be the last, on account of the expense and the strenuous work to which the National Guard was subjected. This was perhaps mere talk; at least we hope so, as these affairs, peculiarly national in character, are not confined to any State. If the work cut out is too much, this is a matter of detail and can readily be adjusted. The work certainly should bear some proportion to the time. Large camps of maneuver are new to the American people, but they have been gradually working their way into favor for the last few years, and have come to stay. Dollars and cents is no argument against them, because of their paramount importance to the nation. The scope and management can be readily adjusted. Time is a great factor in their success.

The life of the nation may not be dependent upon its army, but it certainly does depend upon the capabilities of its citizens to bear arms and fight its battles. The nucleus of our military force is the Regular Army, a trained body of men composed of citizens of this country, for the time being under military government. All our wars have shown that the Regular Army forms but a small part of our national forces, and in the future as in the past, for immediate and special exigencies, we must rely upon the militia, and beyond their sphere, upon the volunteers.

The spirit and purpose of recent laws is to expand or enhance this force so that we may have a sufficient number of trained men to meet the first move of the enemy; and can this be better done than in such camps of maneuvers as Manassas?

The instruction our soldiers receive in these camps will ad-

mirably prepare us to meet the requirements of our position on this continent. We do not want the imperiousness or militarism of Europe or despotic governments; it was from this the forefathers fled in the seventeenth century. The personnel of the army is in the full sense democratic. This is shown in its laws governing appointments and enlistments, and in the restriction of its powers.

Affairs like the Manassas maneuvers are broadening. The object of the drills which are daily practised in armories and at our various military posts is to have the men and units of organizations to move evenly and without confusion, or, as Van Scherff puts it, "To bring the men as individual combatants, and the individuals as joint combatants, to the highest possible pitch of warlike efficiency, to make soldiers of them, and of these soldiers to form organized bodies." This, with the moral training, love of country and *esprit de corps*, is the aim of military education. In a word, it aims to preserve order out of apparent disorder, because men trained to instant obedience under all circumstances are apt, when properly led by their officers, to keep their presence of mind in battle. These are the qualities which distinguish the trained soldier, "The Regular," over masses disorganized or hastily organized, illustrations of which we find in all wars.

Until recent years in this country our drills were of the parade-ground order, unvaried except by target practise and some detached duty. It was the same old grind from the beginning of the year to its close. This has been all changed by the introduction of the maneuvers and advancement in military ideas; so from this on we are apt, irrespective of expense, to have a well defined and practical system of varied military instruction, each year being an improvement on the one preceding. The military gait, or strut, and the well-fitting uniform are conducive to *esprit* and should be encouraged. Maude, the brilliant writer upon tactical subjects, remarks that "No practical soldier ever thought that the wall-like precision of the march-past, or the lightning rapidity with which arms were shouldered, had much to do with the science of theoretical tactics; but they did know that these were the outward visible signs of the knowledge and the spirit which alone rendered the execution of practical tactics on the battle-field possible. What they did not know, and what to-day (unless the Japanese are now excepted) no nation but the Germans have thoroughly

realized, was, that mechanical obedience would not suffice, but that it must be combined with higher education of the man himself."

The maneuvers now so successfully started must be kept up. A certain time in garrison or armories devoted to ceremonies and exercises is very necessary for rudimentary work and to instil professional pride. But to get an idea of the real duties of the soldier, we must get on the road and in the field. What a splendid illustration we had of this in the maneuvers at Manassas by the "Blues" and the "Browns." Just think of our militia taking the road from bivouac a little after one o'clock in the morning and making a forced march of twenty-seven miles, in the dense woods, crossing streams just as they were, shoes and all, and near the end charging the enemy across a creek that wet them to their armpits, and in this wet and uncomfortable condition they fought all day until they had won the combat. It is only by these big camps that our people can get a real idea of what soldiering means. Victories in all great wars through the different military epochs have been due to well-disciplined and seasoned armies. It took nearly, if not quite, two years in our Civil War to learn this truism. France thought seriously about it after the War of 1870, and is still thinking.

The older officers of the army can look back and think of the effect the old grind, or the constant routine of the garrison, had upon our soliders. It not only caused drunkenness, but discontent and desertion. And they may recall also how contented the men were on the march or in the field. They were hearty and strong and felt that they were doing real soldiers' work. In the year 1873, when we were on a five-months' tramp in Dakota, on the final survey of the Northern Pacific Railroad, the men got so that they could easily step off at the rate of three miles an hour, and complete a march of twenty and twenty-two miles apparently as fresh at the finish as at the start. This is not remarkable; it was a common occurrence not so many years ago on our frontier. Why, last year on a six-day practise march of the writer's regiment, the men, and most of them new men, marched twenty-three miles on the last day in rain and mud, and to show that they were not especially fatigued (?), took the double time across the parade to their quarters. These are mentioned here to show what a little seasoning will do. Could the National Guard regiments have remained at Manassas a few days longer, they might have done likewise. This season-

ing cannot be had in armories, etc.; it must be had at the maneuver camps like Manassas.

If these outings are so necessary to the Regular Army, how much more so must they be to the organized militia of the different States. And how let us ask, can the objects of the act approved January 21, 1903, to promote their efficiency, be better carried out? One of the prime objects of this law, and one of vital importance, is to have a trained force of militia ready for instant service when called upon under the Constitution. Certainly, in the National Guard regiments, which passed through the serious practical lessons of war at Manassas, there can be found many men, in consequence of their experience, capable of organizing, training and commanding volunteer forces, and the more of these maneuvers we have, the more of such officers will we have. Many of the best regiments throughout the States furnished trained officers to the volunteers in the Civil War, but the ones trained under the present system will be much better prepared for any further contingency of war than they could possibly have been during any period in the past. The Secretary of War recognizes this fact in his report of 1903, when he states that "It is for the interest of the National Government to make these organizations as effective as possible, having in view their prospective National Service as Militia, and their immediate service as the school for the National Volunteer soldier."

If we persist systematically in having these fall maneuvers, with all the forces working in harmony, the citizens so trained will form, together with the regular troops, but one army, subject to the same command, drawing arms, ammunition and supplies from the same source and subject to the same general system of accountability for property. They will have become familiar with the same arms, ammunition, supplies and forms and methods of transacting business in similar organizations under the same discipline. It is only by such means that the militia, later the Volunteers and the Regular Army, can possibly form a homogeneous force to bring about a habit of co-operation and mutual respect and good understanding between the officers of the two forces. There seems to be one thing lacking, however, and that is, the National Guard regiments ordered to the maneuver camps are under the discipline of the Regular Army officers by courtesy only. The colonel, representing his governor for the time being, may decide a matter for his regi-

ment that conflicts with orders of the general commanding. This was pointedly demonstrated at the Manassas encampment, when so many regiments in the Second Division declined to participate in the grand review for various reasons—in one case, because the regiment failed to get breakfast, but principally because the men were not equal to it physically. Let it not be understood that this was done in a defiant or wilful spirit, but simply in the spirit that in such cases they had a right to decide the question for themselves. Of course, for a serious breach of orders they might be ordered home. This matter is mentioned simply because it was referred to in the various papers. The conduct of the National Guard during the four-days' maneuver was most exemplary, and to this fact all their high commanders bore testimony. General Bell, in his "General Orders Number Five," expresses his appreciation of the sustained interest manifested by the attending organized militia, despite the discomforts of bivouac, heat and dust, in maneuvers which involved all the hardships of actual war. He also refers to the admirable discipline shown by all the troops, both regulars and organized militia. As far as these matters came under the writer's observation, every order issued was promptly obeyed.

It was the writer's good fortune to have excellent regiments in his brigade. While the work tested their mettle to the fullest extent, they nobly stuck by their work and acquitted themselves with honor. The work cut out for them during the maneuvers involved sleepless nights, the hardest kind of marching and numerous deprivations, and so far as it came to the writer's attention they did it without a murmur. The *esprit de corps* of companies and regiments was remarkable, and where it showed the most was in the grand review, involving in the case of the Second New York Infantry, a march of seventeen and one-half miles, a severe test after the four days of battle. Well may New York feel proud of this regiment; it is a most remarkable one. I believe this regiment was the strongest of any in the maneuvers, and it seemed to be a pride with them to maintain their numbers to the end. The Ninth Massachusetts Infantry was also splendid in this direction.

The great desideratum of these fall maneuvers is time. Especially is this necessary for the organized militia. An attempt was made at Manassas to take the regiments through a course of progressive drill in close and extended order, in battalion, regiment and brigade, but little could be accom-

plished in a day and a half in preliminary work prior to the practical work in the maneuvers. But although the time was short, it was fully taken advantage of and the regular officers and companies for that matter were assigned to different National Guard regiments to help out in every way. Also the regular quartermasters and commissaries with their non-commissioned staff officers, performed excellent work in this direction. During the execution of the problem, the regiments alternated in the matter of advance and rear guards and flankers; and all of them had practical and varied instructions in outposts and patrol duties. The lessons learned even in the short time must prove valuable to the Guard. It would be a great thing for the militia and the spread of military knowledge if from ten to fifteen days could be spent by the militia in these camps. This would give time for preliminary instruction and would permit the problems to be carried through in a rational manner, without fear of breaking down untrained men.

It would seem this is not too much to expect from the organized militia, in view of the fact that the General Government expects it and provides for it in its recent laws, because it is expressly stated in such cases that when so participating they shall receive the same pay, subsistence and transportation as is provided by law for the officers and men of the Regular Army, to be paid out of the regular appropriations for the support of the Army. Unusual exertions should be made, therefore, in every State to meet this laudable purpose of the nation. If the States cannot send any particular regiment as a whole, because the men have to be at their work by a certain time, let them send composite regiments, who may be able to give the time necessary without detriment to themselves or their employers.

The writer recently attended the encampment of the Pennsylvania National Guard. There were between 9,000 and 10,000 men in camp on the old battle-ground of Gettysburg. The thought came to him while he was in this camp what an excellent chance there was for movements of some importance, or to instruct in strategy, grand tactics and the minor operations of war. While the grounds were not quite so extensive and varied as those of Manassas, still they had accommodated the great armies of the Civil War in one of the most decisive battles, and he thought then that almost any problem in war might be solved thereon. The Pennsylvania Guard used it

only for ordinary work, but with a proper contingent of other forces from the Regular Army and contiguous States, say for one, New York, the exhibition at Manassas might have been equalled, if not surpassed; and, let us add, with much less expense. Why is this not a good idea to have the fall maneuvers centered, so as to have them in sections; for example, one to embrace the New England and Northern States; another in the Central West or South and so on, each section being established so we can have sufficient troops at each to illustrate the art of war in all its varied features. The Government, in its recent laws, provided for this also, in allowing for separate State encampments of the militia and out of an annual appropriation for the purpose, the same pay, subsistence and transportation or travel allowance as are made for similar purposes to officers and enlisted men of the Regular Army. This idea we feel certain would cut down expenses radically. In the Manassas camp there were regiments from as far South as Tennessee and Texas. This idea, duly systematized and worked out, would give us two maneuvers where we have but one now, without increase of expense.

After years of experience and service with our troops, we are convinced that we are moving in the right direction and that it is only in this way we can get the comprehensive view of strategy and tactics, with all their incidents, so necessary in time of war. It is hardly conceivable that we could have made such serious blunders in the Civil War had we been prepared as we are preparing now; thousands of lives and much treasure would have been saved. The second battle of Manassas in the Civil War was lost by a failure in strategy in not getting between Jackson and his reinforcements, *via* the Gap. To the "Warrenton Pike," instead of Centreville should have been the order. The latter was fatal, as it took the Federals away from the enemy. The aim of the problems at the maneuvers is to assimilate them as closely to those of the War, the three arms, when possible, combining their action.

To obtain every possible advantage to our troops by these autumn maneuvers, the instruction of our troops before and during maneuvers should be progressively developed, and should be systematically divided into periods embracing the training of the individual soldier up to the great combined exercises, and this is the only way in peace that we can properly prepare for war. And it is only by these means that such

problems as published in General Orders Number 12, c.s., Atlantic Division, can be successfully carried out. To illustrate more fully what is meant the following summary is submitted:

1. The training and leading of the individual arms developed on the terrain.

2. The arrangement and execution of the larger exercises on the terrain suitable thereto.

3. Fire discipline and fire control, combining the fire exercises of infantry and artillery as in attack.

4. Practice marches by day and night, with the journal, reports and maps incident thereto, in accordance with the manual "Troops in Campaign."

And incidental thereto, security and information and development for battle.

5. Exercises of pioneers, pontoniers, hasty entrenchment and field works when possible.

6. The cavalry equitation, and the infantry, when necessary.

7. Duties of the supply departments.

8. Medical and sanitary arrangements, and first aid—highly essential, but indifferently met in all our wars.

9. Field signalling and telegraphy.

10. The attack and defense of fortified places, the troops stationed there being required to exercise in their defense.

Most of the details involved in this summary of instruction would have to be taught in armories, garrisons, field or camps. The grand maneuvers must have special treatment, but we have several excellent examples, any one of which might be used as a model to be improved on; for example, those worked out in the Departments of Missouri and Columbia, under Generals Merritt and Forsyth, and the few within the last five years, Manassas perhaps topping them all. Many ideas in this connection may be obtained from the autumn maneuvers of European armies, reported to our military information office.

In the examination of the problems in General Orders No. 12, Atlantic Division c. s., we perceive that they adhere to the general hypothesis or supposition common to such maneuvers by first defining the situation of the two parts confronting each other, the strategical situation of the units involved, and information of the enemy, leaving for the commanders the unforeseen for the initiative. All schemes of this character should be carefully worked out, the natural and incidental develop-

ments working themselves out as they might do in real war, the reports and sub-reports being in the strict military form. In a word, give to these exercises the truest possible representation of a real action, and to the enemy's fire, its full effect. It is a wise precaution to require the opposing parties to halt at 100 paces of each other. The pouches and cartridge-belts should be examined under certificate. All these precautions were wisely taken at Manassas.

It would be interesting to show how the division commanders worked out their respective schemes under the two problems, but as this subject will be treated by them fully perhaps in separate papers, it is thought best at present not to go further into this subject.

There is nothing in the exercises during these maneuvers that should command more attention than fire discipline, and especially independent and judicious use of the art of shooting. This was a matter to which the attention of the umpires was particularly called. They were enjoined to take great care in regard to "Fire Discipline." The instruction stated further that fire should not, under any circumstances, be opened except there is a definite object to fire at, and the degree of firing should be limited strictly to the necessities of the case. An unmeaning fusillade is to be deprecated. As soon as the force of the enemy fired upon has withdrawn, or is for any reason no longer under accurate fire, the firing should cease. The time between maneuvers should be devoted to instruction in firing over all kinds of ground, and from the level up the heights and the reverse. As the company field-exercises are intended to assimilate to those of war, the writer has always thought it would be a good idea to place the figure targets at the edges of woods, along brushwoods, etc., in groups or otherwise, to suit locality, and then lead the men towards them, allowing them to judge the distances for themselves. This idea accords with the saying of a Russian general, "That the soldier must be taught in peace only that which will be of use to him in war."

In the past, too much attention has been given to fancy shooting. It is seriously doubted whether any permanent good obtains in trying to make sharpshooters, because in battle individual men are seldom fired upon, even as close as 300 yards, the men aiming rather in the direction of the decisive point, or the flash which may mark the enemy's line with a fair estimation of the distance. This is particularly the case in the

last stages of the attack. Maude, in referring to this subject, says that "If too much weight is given to good shooting, we get a man who shoots more or less well at long range, but who is not particularly anxious to go in with the bayonet, but prefers cover." This does not mean that the man should not be carefully taught and attain as much skill as possible, and that he should be careless in aiming, because the certainty of hitting the enemy at any range depends on the certainty of the aim. There is too much chance in unaimed fire, as it is apt to be nervous. Individual shooting, to be reliable, requires nerve, patience and judgment.

The necessity of fire discipline was appreciated as far back as 1824, because in the manuals of that period, the men were instructed to fire deliberately by bringing up the firelocks gradually, looking at the enemy to make the shot effective. In those days the value of ammunition and a jealous care in its expenditure were carefully impressed upon the men; for the excellent reason, as pertinent to-day as it was then, that in proportion as a cool and well-directed fire serves to distract and throw the enemy into disorder, so is a wild, confused and hurried fire, which is always without effect, calculated to give confidence, and contempt for his opponent. A shining example of this was the Germans and the French in the war of 1870.

As the reserve militia, perhaps, under the new act, may not have an opportunity to become acquainted with or even see a good rifle until they are called into active service of the United States, it strikes us that it would be an excellent idea to establish armories near the centers of population, contiguous to a good target range, equipped with up-to-date arms, under most careful management, to which citizens might repair to be instructed in the principles of sighting and aiming, and then to allow them at intervals a prescribed number of shots on the range. Such armories, after the land had been secured, might be substantially and inexpensively built. This idea is capable of considerable development and certainly dollars ought not to stand in its way. They would be the means of saving many valuable lives in war by bringing it to a speedy end. Everything that will encourage shooting among the people should be fostered, *a la* Boer—the best weapon is useless without it. The German shooting societies in this country set us a good example in this direction.

We have seen it does not pay to teach fancy positions. By a recent order in France concerning target practice, attention is invited to the fact that "Instruction should not have for its sole object the making of good shots on the range, but the making of good shots on the battle-ground, and the officers should devote their best attention to cultivating in the men those habits of shooting which will be useful to them in the excitement of battle. The making of good records is not to be desired as much as the training of the men who shoot straight while being shot at." The man who shoots well is more than half-formed as a soldier. The Minute Men of '76 and the men who fought at New Orleans in 1812 were not trained soldiers, but they knew how to shoot, as did the "Rough Riders" in the recent war. The words of Inspector-General Breckinridge are pertinent here: "Ours is no longer a nation of God-fearing backwoodsmen, familiar from childhood with weapons, and overcoming natural obstacles, with the practical care of one's self, and with all the urgencies of life in the open. One-sixth of our people are now city-bred, so that practically we have but few trained reserves, although with abundant resources. The men called suddenly to our colors are not necessarily familiar with their weapons, their officers or their organizations, as in Europe."

Our volunteers, until they become strongly inured to war, lack the unity, cohesion and individuality of the trained "regular." It goes without saying that the American volunteers are courageous, and with good officers to rally them at the critical moment, they are certain to give a good account of themselves. The practises of this class of troops in peace should closely assimilate to those of war. Fine armories and uniforms, fine music and the banner on the outer wall are all right to keep up *esprit de corps*, but the reality—campaign suit, hard tack, hard marches and deprivations—is a terrible awakening. Let us hope that the new militia laws will have the effect of removing many of the incongruities of the past, and that the practises and forms of this class of troops will conform to those of the Regular Army, *i. e.*, calling things by the same name, so that when the tug-of-war comes, their officers may readily comprehend the difference between a "Ration Return" and a "Schedule," and thereby avoid delay in providing for their men. We know the "red-tape" of peace goes to pieces in war; war will not brook delay.

Our isolation in the past from the great armies of the "Old World" has perhaps kept us from serious complications. But now that we have jumped our boundaries a little short of 8,000 miles, and with the absolute necessity of maintaining the "Monroe Doctrine," our naval and military affairs ought continuously to command the most serious consideration. It is our wish to be on friendly terms with the rest of the world, as we are a peace-loving people. In view of the facts, however, that European navies are increasing and becoming more efficient every day, and that they are fortifying their island outposts along our coasts with the most approved guns, Americans ought to arouse to a due appreciation of their situation—in other words, keep up ways and means. Prepared, we need not seriously fear any nation or combination of nations. A word to the wise may not go amiss. Heaven has smiled upon us, and let us not forget the nature of the forces we have been "up against" in our last wars and so be lulled into undue confidence.



AN ARMY SERVICE CORPS

BY CAPTAIN JAMES A. SHIPTON, ARTILLERY CORPS.



THE present antiquated method of doing the enormous amount of non-military work of a post, is an old-fashioned inheritance from the days of long enlistments and the simplest rudiments of military drill; when there were always plenty of old, well-trained soldiers available for the purpose and with little else to do. During the many years in which our regular army was, popularly, at least, regarded as a sort of organized national police, whose most important routine duty in garrison was to keep in order certain areas set aside as military reservations, the system worked fairly well. Conditions now are changed, and demand a reorganization of this important feature of army work on common-sense, business principles. This fact has long been recognized by officers in high command and they have frequently referred to it, more or less incidentally, in their annual reports. In 1892 the Adjutant-General of the Army advocated the formation of an Army Service Corps for the different posts, similar to the one already then so successfully in operation at West Point.

In his annual report for 1903, the Superintendent of the United States Military Academy, in urging the increase of the detachment of Army Service men at West Point, concludes his recommendation as follows:

"I feel that the men of this organization as a class, if properly handled, render services as good in quality and greater in quantity than the civilian employees, who are hired in large numbers during the working season of the year. It is not only more economical for the Government to increase the strength of this detachment, than it is to hire civilians to do the work done by these men, but the men themselves are always on hand to respond to any emergency calls which are made upon them, outside of the usual working hours of the day."

In the last annual report of the Commanding General, Division of the Philippines, there is to be found a strong recommendation for the organization of a General Service Corps.

The reports recites that there were about 6650 clerks, over-

seers, mechanics, laborers, etc., who should be supplanted by a corps of trained enlisted men, and points out the evils of the present system with special reference to the conditions in the Islands. The report continues as follows:

"All European troops serving in the tropics have a large number of camp followers who are really native servants. They perform all the drudgery about camp and quarters, and follow the troops in campaigning. The soldiers are reserved exclusively for fighting, and are relieved from all duty not tending to further that end. For all general purposes connected with laboring work around posts, such as kitchen police, scavengers, cutting grass, weeds, etc., a certain number of laborers should be allowed for American company and band organizations, either in garrison or in the field. Natives should also be employed in such numbers as the necessities of the service require, in the discretion of the division commander, and at rates of pay fixed by him. They would be employed in loading and unloading military freights, except supplies actually issued to troops for immediate consumption; in packing, unpacking, and moving military supplies or property in reserve or storage; and in making roads, bridges, wharves, and buildings.

"Extra-duty pay should not be allowed here, but there should be organized and maintained a trained corps of army service employees, and they should be enlisted soliders, so that they may be controlled and disciplined. Very strict prohibition should be made in the law authorizing such army service corps against their employment in any menial capacity for officers, such as personal servants, cooks, orderlies, etc.

"This is a work for the general staff to take up and carry into being. It will be of immense benefit to the service."

In a recent comparison of the Russian and Japanese armies, a well-informed correspondent has this to say:

"Like nearly all of the European forces the Russians go heavily-burdened on the march, while the mobility and the endurance of the Japanese at the time of the war with China were ascribed to their 'flying light.' Not only do they keep their outfit down to the lowest limit that is consistent with safety and comfort, but the Japanese keep with them an unusual number of company servants, whose duty it is to cook, and look after the camps in active campaign. This work in other armies is usually done by company details, and even now it has been decided to instruct our soldiers more thoroughly in the art

of cooking, an excellent measure, to be sure, but one that promises to continue the practice of weakening a regiment's numerical strength by drafts for camp duties. The Japanese force is either resting or giving battle, while that of their enemy is hauling supplies, chopping wood, trenching tents, cooking, policing camp, and doing the thousand and one jobs that are necessary in military housekeeping, and that, if not necessary, are nevertheless ordered to keep the men busy and to prevent their minds from dwelling on their troubles.

"On the march the Japanese put nearly all of their supplies into baggage wagons or load them on their servants, whereas, it has long been the custom in Western armies to impose burdens of from thirty to seventy pounds on the soldier, counting his arms, accouterments, blanket, knapsack, tent pole, canvas poncho, dishes, rations, canteen and ammunition. This inured the men to the hardships incident to war, but it looks as if it incidentally exhausted them to such a degree that their fighting was less effective than it would have been had they gone upon the firing line in better condition. The wonderful spirit shown by the men of Kuroki's army is quite possibly due to their freedom from the burdens laid so easily on soldiers on the march."

In the last annual report of the Commanding General of the Atlantic Division, this subject is referred to in the following terms:

"The need of a service corps to carry on at posts skilled labor of a non-military character, is a subject needing legislative action. Such a body of men would relieve the troops of the line from much work which now withdraws them from their proper military duties. The difference in the expense to the Government would not be great, for men enlisted and used simply as clerks, mechanics, teamsters, etc., and doing their work continuously during the working hours of the day, would be worth at least double the number of men on 'extra-duty'."

For the benefit of the layman (in and out of the service), if any such should chance to read this, it may be explained that the non-military work at a post consists in providing in all respects for all the needs of the entire garrison, which may be regarded as a large and everchanging family, which must be housed, clothed, fed, furnished with water, lights, fuel, etc. Sanitation and police must be looked after carefully, as also preservation of buildings, plumbing, painting, carpenter work,

transportation facilities, horseshoeing, repairs, etc. In an artillery post there are generally steamboats and launches to be looked after, electrical plants for light and power, and pumping plants to be operated. And to cap the climax, and more than double the work, minute and accurate records, in duplicate to sextuplicate, must be kept daily of all transactions relating to every man and every pound of goods in the post. All this work, or practically all of it, is now expected to be done, as an addition to their military duties, by enlisted men detailed for the purposes, under the direction of officers likewise assigned to this duty by the post commander. Under the regulations, depending upon the size of the garrison, a certain number of enlisted men may be detailed on "extra-duty," that is, these men get extra pay for the outside work they do. In an artillery post the number of "extra-duty" men allowed, is usually about one-third of the whole number required to do the work, and right here the trouble begins, since the other two-thirds must be detailed on "special" duty for which they get no additional pay. The only advantage (?) of being on special duty is, that, instead of going on guard once a week, with a corresponding day of hard labor on old guard fatigue, a man usually does not go on guard, but has six days a week of hard work including drills; very often assisting a man with all his exemptions from military duty and extra pay besides. This makes the special-duty man dissatisfied, and it is difficult to find men willing to do this work, unless from among those who dislike the military service and only wait for the expiration of their periods of enlistment; in which case, they are generally worthless all round, from a military standpoint. In time of peace, the men on extra and special duty do almost no purely military work, and are simply enlisted laborers. They are fairly well paid for the work they do, considering their soldier pay, extra duty pay, clothing allowances, rations, fuel, lights, etc. But why should they be considered as soldiers and counted in the authorized effective of the army?

This post is not a representative one in the amount of non-military work to be done—at least, it is hoped that it is not. But since the same conditions apply more or less throughout the artillery, this may be taken as an illustration. The post is newly garrisoned (by two companies) and has a very large armament of all calibers. The reservation is recently cleared (as far as it is cleared at all) consists of 180 acres, and, being on an

island, all supplies arrive by boat and must be hauled nearly a mile, up the hill and down again to the storehouses. Garbage must be hauled over half a mile to be dumped on the beach; coal and wood for a considerable distance to the barracks and quarters; about one ton of coal a day, for half a mile to the power plant and an equal amount for a longer distance to the pumping plant; and there is, besides, much other hard work incident to a new post not yet finished. Guns are being continually dismantled and remounted, and various other repairs to the armament are constantly being made. The messenger service is particularly onerous; on a certain day recently, of the thirty-nine privates in one company, present for duty (not including thirty-one men on extra or special duty), thirty-eight of them were detailed, by name, on guard, old guard and various fatigue details. These men, in general, turn out at fatigue call (at 7.00 A. M.) at this season of the year, to clean up the various offices, take up garbage, sweep sidewalks, etc., coming back for drill at 8.15. In order to get through the work of the day, it is found necessary to excuse them, after the prescribed half-hour's fire direction drill, at which time an average of thirty-five men leave this particular battery.

The number of men who may be considered as permanently detailed away from purely military duty in the two companies here, is thirteen (13) on extra duty and forty-five (45) on special duty; this, of course, does not include special details for the day, nor the old guard fatigue. As a matter of fact, these men are not all available for work eight hours per day, nor do they always work hard during the hours they are available, but it requires this number of soldiers each day to get through with the routine work of the post, even indifferently well. When such a large number of men are so employed, and subtracting the sick, guard and other absentees, this generally leaves for drill, after the first half-hour, only a single gun detachment, often with reduced numbers, and generally, too, with no competent telephone men, range detachment or gun commanders. These left-over detachments are rarely the same for two days in succession, and hence, it is difficult to bring them up to a standard of efficiency. The only thing remaining to be done is to have recruit instruction, gun cleaning or general police of the emplacements. The men detailed as clerks, helpers, assistants, etc., in the various departments, are naturally the smartest men in the company, since these posi-

tions require men of the highest available ability. After artillery drill comes infantry drill, guard mounting, parade, and other incidental drills; athletic, signal, first aid, fire drill, and always work, work, work.

Contrast this with the conditions existing in a company of any of the Continental armies of Europe, where all the recruits arrive at the same time each year, and all the officers and men are available for instruction at all times. A definite scheme is laid down, and officers are assigned as instructors, the whole plan being carried out systematically and progressively. Captains issue their own necessary orders, have no outside duties to take them away from their companies, are held responsible for the training and efficiency of their men, and devote their time and talents to their work.

Returning to our own service; officers, of course, get no additional pay for non-military work (except the commissary), and since the chief of the bureau under whom he is working has no interest whatever in the officer's military duties, there is much resulting confusion. For example: the chief quartermaster does not hesitate to call upon the post quartermaster for "detailed estimates of material and labor, with plans and specifications, in triplicate" for a new guard-house and a new coal-house (an actual case), never considering that the post quartermaster has no assistant competent to do this work, that he is not an architect, nor that he is commanding a company, with no lieutenants, is commanding the post, is commissary, instructor in the officers' school, police officer, fire marshal, a member of the gunners' examining board and of a busy general court martial.

The post quartermaster, with a large property responsibility, and with inexperienced and frequently changing assistants, must, for the sake of his pocketbook, if for nothing else, give a considerable portion of his time to his duties as such—all of which takes him away from his legitimate professional work as a company commander (as in this case), or, if a lieutenant, as assistant to the company commander; which duties are enough to keep any officer busy.

The defects of this system are not far to seek. A few of the most apparent may be indicated as follows:

1. In extreme cases, like the one cited, it tends to get both officers and men into a hopeless state of drudgery, a feeling of being ground between the millstones—the upper, of that which

is apt to appear to most of them as the tremendous task of mastering the intricate details of their profession; the nether, of getting through the equally tremendous amount of non-military work and ordinary manual labor incident to a proper administration of the post. Once get a man to feel that he has a hopeless and distasteful task before him, and he begins to look toward that brighter and more attainable goal, the day of his discharge—never very far off, with our short enlistment. He has only to drag through the remaining months, unless in the too frequent case where the life becomes so unbearable as to induce him to desert.

Under the most favorable circumstances this system has a very bad effect on the men individually, and on the service as a whole. Time-expired artillery men, as a rule, do not re-enlist at all, or go elsewhere to re-enlist, and generally either to the cavalry or to the infantry. They give as a reason for this, among other things, the immensely greater amount of hard work in the artillery, and, frequently, the isolation of an island post. Thus it happens that our gunners and non-commissioned officers, who have attained whatever proficiency they may have, through their own hard work, and that of their officers, are lost to us after one or two enlistments, and we are constantly at the foot of the ladder in this respect.

2. It is a source of never-ending confusion, which necessitates the personal supervision of someone in authority each day. Each soldier is under the orders of two or more perfectly competent authorities—his company commander and the officer under whom he is doing extra work. When he is absent from his military duty, he excuses himself to his captain on the plea of being at this extra work and vice versa. The Government frequently (and indeed generally) gets as many hours of military duty out of this man, as he finds it impossible to dodge, and the same number of hours of non-military work. This system encourages him in this method and the Government is the loser in each case. It is not the fault of the man but of the system. If he wants to go on pass he must get permission from his company commander, the officer under whom he is doing "extra duty," and his post commander.

No continuity of work is possible, but everything must be begun anew with new men each day. In a wider sense, this extends to our garrisons which are constantly changing stations and leaving each new commanding officer to make new plans,

and often spending the greater part of his tour, and the time of his men, in undoing the work accomplished by his predecessor.

3. It constitutes a most serious check to *esprit de corps* in artillery companies. Duties are arduous and some of them hateful, which soon extends to all of them because of the very weariness of distinguishing those which are not distasteful. In fact, no company *esprit de corps* is likely to be found, nor is it to be expected, where the nature and extent of duties make it an object to dodge them to-day knowing that someone else will do them or dodge them again to-morrow. Soldiers and civilians will have more respect for the uniform of the United States Army if they do not see it so frequently worn by the drivers of market wagons and garbage carts.

A recruit, who is a good carpenter, may find himself getting more pay than his first sergeant, who has been twenty-five years in the service. This is illustrated by the following remarks and table taken from the report of the Division Commander mentioned above, which could doubtless be duplicated in almost any company in the service. "Moreover, the present dissatisfaction due to privates on 'extra duty' getting more pay than non-commissioned officers, would cease to exist. A table, presented by a captain of a coast artillery company, showing conditions actually existing in his company, illustrates very clearly this incongruity, and is here given:"

DUTY OR SPECIAL DUTY.			EXTRA DUTY.		
Grade.	Work performed.	Monthly pay.	Grade.	Work performed.	Monthly pay.
1st Sgt.		\$32.00	Sergt.	School Teacher.	\$41.00
Sergt.	Observer	26.00	Pvte.	Post Exchange	30.00
Sergt.	Gun Commander...	25.00	Pvte.	Clerk, Art'y School ...	20.00
Sergt.	Gun Commander...	25.00	Pvte.	Teamster	28.50
Sergt.	Observer	23.00	Pvte.	Janitor	25.50
Sergt.	Chief Plotter	21.00	Pvte.	Laborer in Q. M. D ..	24.50
Sergt.	Gun Commander...	21.00	Pvte.	Teamster	24.50
Corpl.	Company Clerk....	20.00	Pvte.	Teamster	23.50
Corpl.	In Fire Comd's Stn..	20.00	Pvte.	Carpenter, Q. M. D ..	23.50
Pvte.	Mail Carrier	15.00			
Pvte.	Carptr. Ord. Dept...	15.00			
Pvte.	Lab'r Sig. Dept....	14.00			
Pvte.	Messenger Hdqrs...	14.00			

4. It is subversive of military discipline, as is proved by the fact that a great many of our summary court trials are for failures to do work which, bearing no relation whatever to military duties, soldiers should not be expected to do.

5. Military work is indifferently done, and neatness and smartness of appearance especially, are sacrificed. It is too often a good excuse for a dirty gun at guard mounting or inspection, that its owner was on fatigue duty of some kind when he should have been cleaning up; "kitchen police" being a frequent offender in this respect. Men have less "heart" for military work, artillery work especially, because they know that as soon as its period is over, they must go to something else in no wise related thereto; hence, the inclination is to drag through the drill hour as comfortably as may be.

6. Non-military work, when done at all, is worse than indifferently done. The constant oversight necessary to properly superintend incidental work, of a non-professional kind, at this post, is all that one officer can accomplish. And, in spite of his best efforts, the losses and damages caused to Government property, animals, wagons, tools, buildings, etc., by the carelessness or wilful mischief of disgusted or ignorant and unskilful fatigue details, and for which it is almost impossible to fix the responsibility, would almost pay the hire of competent men to do the work *well*, which is now done indifferently or worse. Thus the present system tends to make of the enlisted man an indifferent soldier and a worse laborer or vice versa, according to individual predilection; but always works, in either case, to the disadvantage of the Government.

7. The system is not economical.

8. It would not be applicable in war time, for the simple reason that all enlisted men would return to their companies at the outbreak of war, as a matter of course; and civilians, inexperienced in the work, must be employed in their stead. There is no more important application of that excellent advice to prepare for war in time of peace, than is found right here, as our recent experience amply proved to those concerned. Think of it from a business standpoint, and does it not appear the very essence of folly, that no trained personnel, except a few officers and clerks, are provided to take charge of the matter of transportation and supply of our armies when called upon to take the field?

9. The strength of that part of the army stationed in the United States, is reduced by 7240 men, according to the latest official statistics, or more than two brigades, who are detailed on extra and special duty; and also by a large number of officers, who, while nominally with their companies, are really so much

occupied with non-military duties which must be done, that they have no time for anything else. Even if they attend the different ceremonies and other military formations, it is simply a perfunctory duty, and they have, and can have, but little real interest in their companies, when all their attention is required elsewhere. These officers and men would be returned to their companies as stated above, in case of war, leaving their places to be filled by untrained men. And this number does not begin to represent those who are excused from military duty to a greater or less degree on account of non-military work, and whose military training is correspondingly curtailed.

As a final and complete solution of the entire question, there should be organized a General Service Corps, an Executive Staff Corps, consisting of sufficient officers and men to serve the entire army and supply all the needs of its daily life. If the present laws are not elastic enough to admit of such a new organization, then legislation should be asked for to provide this service corps, which represents to-day the greatest need of our army.

But leaving out the higher question of consolidating the various departments now engaged in furnishing supplies to the army, which is no longer "a question" at all, if viewed from a business standpoint, each post should be provided with a detachment of a General Service Corps, under command of an officer to be known as the "supply officer," and consisting of all the post non-commissioned staff officers (except the sergeant-major), and such other non-commissioned officers and privates as may be found necessary in each post, to do the work now performed by extra and special duty men and fatigue details. One officer, without any, except perhaps occasional routine military duties, but whose first business is to look after all questions of supply, would relieve the three or four officers now doing this work in every post, and leave them free to devote themselves to their legitimate military work. The only non-professional work required of enlisted men should be an occasional general police, and such manual labor as is necessary in the various drills, in policing emplacements and the grounds around them. This is not to be mistaken for a desire to coddle soldiers and to provide servants for them in order to give them an easier life. On the contrary, it is only a proposition to enable the Government to get that amount of military work, and consequently military efficiency, from the enlisted men which

it has the right to expect; and incidentally to get that class of men which the service requires, to enlist. After the organization of this service corps, it might be advisable to increase the number or duration of drills—but that is another matter. It would certainly be expected that the small army of men now on non-military duty, would be returned to their proper companies, as soldiers doing military duty. It is simply not within human possibility, under present conditions, for either officers or men to carry out conscientiously and to the letter, all the various drills, recitations and exercises which are required by orders.

While waiting for the consolidation of all the supply departments, I would have a detachment of General Service men at each post, or in each artillery district, working in the several departments now existing, and of sufficient numbers to do all the non-military work at the post. This detachment should have a definite legal organization and equally well-defined duties.

The supply officer should command the General Service Company, and should be on the staff of the Post Commander, who should furnish periodical reports as to the manner in which the business of the post is conducted. He should take the place of the quartermaster, commissary, police officer, post exchange officer, officer in charge of the post gardens and ordnance, artillery engineer and signal officer, only in so far as *supplying* to the post authorities, the material of these several departments, is concerned. In these capacities his duties and powers should cease when supplies leave his store-room, and the making of the various reports and inspections required in regard to material which has been issued, should devolve upon the responsible line officer. As commanding officer of the General Service Company, he should have the same duties as are, or may be, prescribed for the captain of a line company. He should be exempt from military duty, and all details, such as surveying officer, courts martial, etc., at this post. At other posts, older and in better order, or having for any reason less non-military work, this officer might, at the discretion of the department commander, be available to the post commander for such other duties (not involving the command of other troops) as he had time to perform. At larger posts he might require an assistant. He should be given rank, pay and

allowances commensurate with the duties and responsibilities of his position.

Retired officers of suitable rank, should be available for this duty, as they now are for college and militia duties; and while so serving should have the full pay and allowances of their grade. They should, of course, not be assigned to command troops, other than the General Service Company, and should be selected for such duty in the supply department as they are fully competent to perform.

Any officer, who faithfully discharges the several duties of this position, need not feel that he holds an office unworthy of his best talents. The task of supplying everything needed, personally and professionally, and otherwise providing for the requirements of even a two-company garrison, is well worthy the best talents of any officer.

The men of the General Service Corps should replace the enlisted men now doing non-professional work and should be enlisted in the regular way, with special reference to the classes of work for which required. They should have a separate barracks and all the allowances, privileges and responsibilities of enlisted men of the line companies.

All men required to perform skilled labor should have a course of training at schools established for that purpose, as well as serving a sort of apprenticeship as assistants to trained men in actual service. Such for instance, as all sergeants who should have a special course in a training school as a preparation for their duties. All cooks should be especially instructed in the use and the handling of the ration. Bakers should be trained to their work; men having clerical work to do, should be given a proper insight into army methods before assuming the responsibilities of their positions. This would cost something, but would be found to be true economy in the end. This training should be done at the special recruiting depots, or in special service corps "depot companies," to which all recruits intended for skilled labor in the General Service Corps should be sent for this purpose. Classes for General Service Corps officers and men might be maintained at some of the existing army schools.

A sergeant cook should be provided in each district (or regiment) whose services as instructor or company cooks in the management of the ration, would be more than paid for by the economy he would make and the greater satisfaction he would

create among the men. It should be his duty to visit each company kitchen for the purposes of instructing company cooks. A district bake shop and butcher shop would also be in the direction of greater economy and contentment. An enlisted man should not be made to pay for baking his bread nor for cooking his meals as he now does, indirectly, under present arrangements.

Each post should have a tailor shop with thoroughly trained employees, to fit and make the clothing for enlisted men. Nothing does more to encourage a proper pride in any right-minded soldier, than a neat-fitting, well-made uniform, and since the men pay the bills, the tailor should be a good one and a member of the General Service Corps, and not of the line, where he has to do military duty, or be excused from it to the detriment of the other men. He makes enough money from his tailor work and should not receive soldier pay. If he is paid as a member of the General Service Corps, he should not be paid by soldiers, whose clothing allowance should give them neat and decently fitting garments, without extra cost to them.

Promotions should be possible in the ranks of the General Service Corps; thus the assistant to the Quartermaster Sergeant, the quartermaster clerk, should be able to hope that he might some day become a Quartermaster Sergeant; the plumber's assistant should be advanced, when competent, and so on throughout the list.

At the beginning, suitable experienced men from the line having special aptitude for General Service Corps work, among whom are many now doing that very duty, should be permitted to transfer, thus giving the best qualities of all branches to the first organization. Certain other men, those having no aptitude for the military service, might, if they volunteered, also be transferred, as being of more use in the working corps.

As is recommended for officers, retired enlisted men who volunteer, should be assigned to duty with the General Service Corps, and while so serving, should have the pay and allowances proper to their grade in the corps. Such as are fitted by education, attainments and experience, should be available for positions of responsibility and for clerical duties. The ordinary laborers required, might be hired as needed at different posts, since the number varies for each post, and from day to day at any given Post. In this case the enlisted ranks of the General Service Corps would show a large percentage of non-

commissioned officers and higher class employees, which would be a great advantage in making the expansion demanded on the outbreak of war. This utilization of retired enlisted men would give useful employment to a large class of persons entitled to be pensioners to the Government, to the great benefit of both parties; by providing those pensioners with positions which they are peculiarly fitted by long training to fill, and by giving the Government the valuable services of persons already in its pay, but without employment.

The beginning of this much-needed reform should be made at once, by providing at least a sufficient number of men to carry on that part of the work which must be done during drill hours. When a General Service Corps is provided, if extra duty pay is allowed, it should be for the purpose of paying for "extra" duty only—that is, soldiers who volunteer, should be paid daily, a certain sum per hour employed, varying according to the class of work done, during those hours only which they would otherwise have entirely free for recreation and absolutely without professional duties of any kind. And such volunteers should be given preference over outside laborers, who should be hired only when there is not a sufficient number of competent volunteers from among the enlisted men.

Some further advantages of this proposed reform may be indicated here:

1. Economy should result from the concentration of all duties of a similar class in each district. Government transportation being available, a great many post employees should be assigned to districts, and their numbers reduced. For instance, every post must have a plumber, but, with all the plumbing in good condition, there is no reason why one plumber and an assistant should not take the place of the three now required in this district. And the same is true of the blacksmith; carpenters and painters might be similarly employed to great advantage. In the artillery, these men should be assigned to districts; in the cavalry and infantry such of them as are necessary should be regimental employees as far as possible.

2. The reduction of the number of men required to do any given class of work, would be in the direction of an additional economy. One man, whose particular business it is to do a certain thing, and that thing only each day, will accomplish more, and will do it better, than any five soldiers, not the same from day to day, and whose principal business is, or is supposed

to be, something which has not the remotest relation to the work in hand. A man skilled in any work, no matter how ordinary, can do a great deal more than one who is not.

3. A great advantage would result from the men of the General Service Corps being permanent employees, which enables work to be continuous at any post, notwithstanding changing garrisons, transfers, discharges, etc., and this refers to the keeping of records as well as to the manual labor outside. If routine duties leave any part of the day to the minimum number of men required, there are always permanent improvements to be made at every post which would give occupation. Transfers should be possible of any excess of one class at any Post to another in the same district.

4. It would also be an inducement to men to remain in the service, because it offers more chance for advancement, and suitable employment after retirement from the active service. For the same reason, it would be an incentive to enlist. Married men, particularly, would be benefitted, as they could buy or rent quarters near their posts (if such were not furnished), and would do so, if assured of permanent employment without the frequent changes of station, now inevitable. Many excellent soldiers who marry after one or two enlistments, are compelled to leave the service on account of the expense of changing station and hiring quarters at each new post; these men would be retained in the General Service Corps.

The popular idea of a soldier's duties, formed largely from observation when he parades in town, is far from accurate, especially in the case of the coast artilleryman. It is my opinion that many men who would make excellent soldiers do not re-enlist on account of the hard work, not related to the military service, which they are surprised to find themselves called upon to do, and some of which they would decline to do in civil life. This work is continuous and imperative, and unless someone else is provided, soldiers must do it.

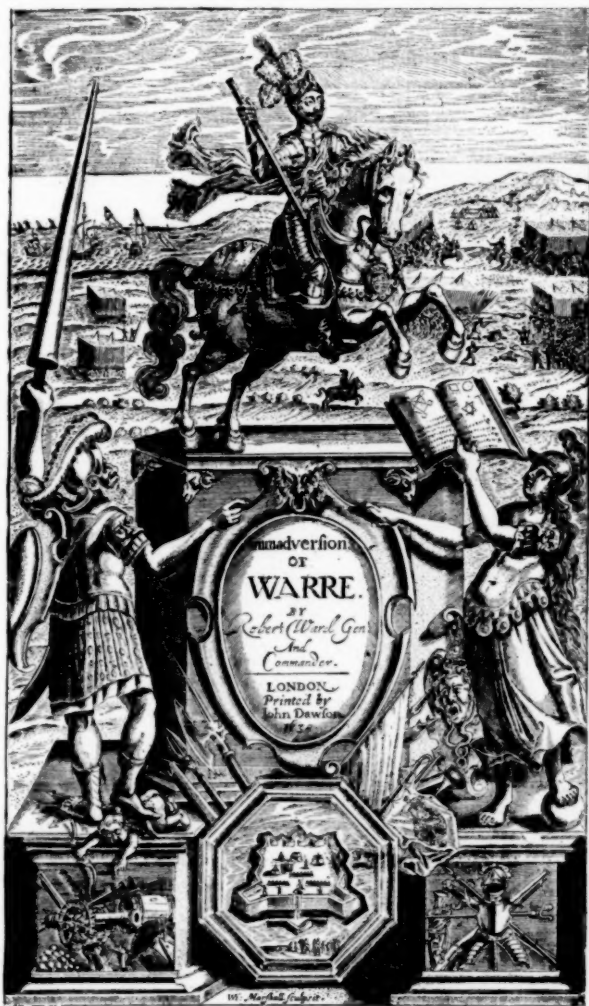
5. This method would provide for the expansion of the peace establishment at the outbreak of war, and thus assure a trained personnel, at the time when it is most needed. It would also return to civil life after they tired of the army, a well-trained, well-disciplined body of men, who were graduates of the best school in the world in which they could matriculate; which would make the army more popular, a result by no means to be despised.

It is believed that this experiment might be tried under existing laws, in some district, by detailing the men now employed in this work, under several different officers at each post, on extra duty, under one officer for the entire district, or one in each post, who would have charge of all supply work as indicated above. I am confident that we could get better service in every way. Better military service, because men will take more interest in their professional duties and have more time for reading, study and recreation; hence we would have more gunners and fewer deserters. Better and more economical fatigue service, because this re-organization of posts on a business basis would greatly reduce the number of persons required for this class of work. We should also have less trouble in getting suitable recruits, if we thus increase the attractions of the service, instead of mistakenly lowering the standard for enlistments.

This does not pretend to be a perfect scheme, a perfect solution of a vexing and perplexing question, ready for adoption, but only a suggestion, the discussion of which by those experienced in such matters, in case it is deemed worthy of discussion, may, it is hoped, lead to practical results in proportion to the importance of the subject.

The artillery hits the target (sometimes), but "scatters," too much; running off, on the one side, into too much minutiae of non-essential, theoretical detail; and clear over the edge, on the other, into work, which, although necessary, is not military. This is a violation of that excellent principle for which many of us have acquired a great reverence—the "Independence of Function." Ten years ago this was not a matter of such vital importance to our then methods and appliances—but "times have changed."





Historical Miscellany.

A BELATED COMMUNICATION.*

Newb 2nd (Mil 25) of the Union
 In the Field May 20. 1866
 Camp near Myandria Va.
 Maj Genl O. O. Howard
 Chief Bureau of Prisoners &c
 Dear Genl
 I am this moment in receipt of
 your communication of the 14th. and I thank
 you for your generous act. I do think it but
 just to Lyman. and not withholding his pro-
 per reply to me last night. I trust he will
 forgive this act most lightly. I will demand it
 as a special favor & pleasure if you will ride with
 me at the Review of Wednesday next. I will be
 at the head of the column at 9 A.M. of Wednes-
 day near the Capitol and beg you will join
 me there. Your friend
 W. T. Sherman
 May 21

*We are indebted to the Editor of the Hartford *Convent* (at Gen. Howard's request) for the above facsimile of a letter from GEN. SHERMAN to GEN. HOWARD, which, after nearly forty years, only reached its destination Dec. 8, 1904, having fallen into the possession of a gentleman of Hartford, Conn., as a relic of the Civil War. (See next page.)

AN ECHO OF THE CIVIL WAR.

(The Hartford Courant.)

IN a few days Gen. O. O. Howard, who lectured at Trinity College Thursday night, will receive at his home in Burlington, Vt., a letter written to him by Gen. W. T. Sherman nearly forty years ago, and which he never saw until Friday in this city. General Howard was the guest of Prof. John J. McCook while here, and Friday morning, before the general left, Horace B. Austin, of this city, called on him and showed him the letter of the existence of which he was not previously aware. By a singular coincidence, General Howard, a few minutes previous at the breakfast table, had been telling Professor McCook about the circumstances which were directly connected with the writing of the letter. The letter is as follows: (*See facsimile.*)

"Head Qrs. Mil. Div. of the Miss.

"In the Field, May 20, 1865.

"Camp near Alexandria, Va.

"Maj.-Gen. O. O. Howard,

"Chief Bureau of Refugees, etc.

"DEAR GENERAL—I am at this moment in receipt of your communication of this date, and I thank you for your generous act. I do think it but just to Logan and notwithstanding his modest reply to us last night, I know he will prize this act most highly. I will deem it a special favor and pleasure if you will ride with me at the Review of Wednesday next. I will be at the head of the column at 9 A. M. of Wednesday near the Capitol, and beg you will join me there. Your personal staff can ride with mine. As ever, your friend,

"W. T. SHERMAN, Maj. Gen."

At the time of the Grand Review at Washington, D.C., Wednesday, May 24, 1865, Gen. "Black Jack" Logan rode at the head of the Army of the Tennessee and Gen. O. O. Howard, the commander of that army, rode beside Gen. William Tecumseh Sherman, who commanded the Military Division of the Mississippi, in which the Army of the Tennessee was a subordinate command. Of course, General Howard as commander of the Army of the Tennessee was entitled to ride at the head of his troops, and many wondered why he did not, and there was considerable speculation as to why Logan superseded him in that position.

Logan was the senior corps commander in the Army of the Tennessee when there came a vacancy in the command of that army. Upon the recommendation of General Sherman, General Howard was called from the East and given command of the army. Logan and his friends felt rather "sore" over that, as they thought that he should have been appointed. Logan had a reputation as a fighting general, but he was a volunteer officer and Howard was a West Pointer, and while both were brigadiers, with Howard ranking,

the rank of major-general was conferred on Howard and he got the command of the army. This was in the spring of 1864.

A few days, possibly a week, before the grand review in which so many thousand Federal soldiers participated, Sherman sent for Howard, who was one of his subordinate commanding officers, and suggested that he should permit Logan to ride at the head of the Army of the Tennessee in the review. Howard was naturally much surprised at the suggestion and expressed himself so to General Sherman, asking if it was not a peculiar request that he should relinquish the command of that army on that great occasion. Sherman urged that Howard make the concession to Logan, who was very popular with the troops of the army, and finally appealed to Howard's well-known Christian spirit in urging him to turn over the command to Logan for the review. Howard's reply was a characteristic one: "Since you, general, my commanding officer, request it and appeal to me in that way, it shall be done," and it was.

* * * * *

It was on Saturday, May 20, five days before the Grand Review, that Sherman wrote to Howard the famous letter which is reproduced here for the first time. The letter never reached Howard, consequently he did not report to Sherman to ride beside him as requested in the letter. Instead, Howard rode with his staff on Sherman's staff. Sherman was looking for Howard and rode by the staff, but did not see him, and Howard, ignorant of the letter, was not looking for Sherman. Later on, while the column was moving, Sherman inquired of his adjutant-general, "Where's Howard?" and was told that he was riding on his staff. The general, hero of the March to the Sea, sent an orderly to Howard requesting him to ride up and take a position beside him, and Howard complied.

HOW THE LETTER CAME TO HARTFORD.

Years ago, Mr. Austin's father, the late Thomas H. Austin, of Suffield, gave the letter to his son. It came into his possession through a man named B. Oliver Raines, a Southerner who served in the Union Army, who was detailed as a clerk or in some clerical capacity at Sherman's or Grant's headquarters. How he obtained it is not known, but it is supposed that instead of being delivered to General Howard the letter was mislaid and was found in packing up after the review, and was confiscated by some servant or camp hanger-on. It has hung in a frame in Mr. Austin's house for several years. Thursday night Mr. Austin went to Alumni Hall to hear General Howard; while there thought of the letter, and decided to show it to the general. He ascertained from President Luther that General Howard was the guest of Professor McCook and called on him at the latter's house. He was as much surprised as was the general when he learned that Howard had never seen the letter before. General Howard readily identified General Sherman's handwriting and was sure of the authenticity of the letter. * * *

REMINISCENCES OF MAJOR-GENERAL JOHN GIBBON.

By CAPTAIN HENRY P. GODDARD, LATE 2ND ARMY CORPS U.S.V.

ON Monday, February 10, 1896, the remains of Gen. John Gibbon were laid to rest in that most beautiful of National cemeteries, at Arlington, Virginia. By a co-incidence, the grave in which he was buried was within one hundred feet of the very spot on which his tent was once pitched, early in the Civil War. The body had been escorted to the Aqueduct Bridge by all the regular forces on duty in the District of Columbia, and from the bridge to the cemetery by the four companies of cavalry stationed at Fort Myer. After the body had been placed in the grave, a brief but eloquent address was delivered by his old comrade, Major (since Brigadier-General) Charles A. Woodruff, of the Regular Army.

Just three weeks and one day previous, General Gibbon had been my guest at dinner, at my own house in Baltimore, where he had refused to tell any stories of the Civil War "lest he disabuse my only son of the idea that his father had any help in suppressing the Rebellion," but had delighted us all with his stories of his services in the various Indian wars. At that time he reiterated a remark that he had before made in a public address to the effect that one of the most perfect gentlemen that he had ever met, and a man who was ever welcome at his own house, was Chief Joseph, of the Nez Perces Indians. To those who know the history of General Gibbon's campaigns against that famous Indian Chief, this remark reflects equal credit upon both of them. He also told us the story at length of his Big Horn campaign without egotism or self-assertion. The only remark as to his personal part therein that was at all significant, was his statement that although the cold was intense the night before the attack, he did not dare stamp his feet lest the noise should arouse some watchful Indian picket.

It was at this dinner that he told of an interesting experience when, as Lieutenant Gibbon, he was one of the few officers stationed at an inland post in Florida, to whom there came one day in flight, a fisherman who had fled from his island habitation on the approach of the Indians, who had occupied his island for some hours. He kept in hiding while they were there, but when they left, returned to his hut to find only a white flag made of crane's feathers mounted on a little staff about two feet long, surmounted by a few beads and a piece of tobacco. Taking this with him he brought it to the army post, which he reached after a three days' journey, in a rowboat. None knew the significance of the flag until it was shown to a sick officer in camp who was thoroughly familiar with Indian signs and languages. Summoning the fisherman, he asked: "Did the Indians leave no other

sign?" "Nothing, except a few marks in charcoal on a board." "What were those marks?" "A circle, and three straight lines." "On which side of the circle were those lines?" "The left." "Bring me an almanac," said the sick officer. When this was done and the book consulted, he said: "I understand now. That circle represents the full moon and three marks to the left that three days *after* the next full moon the Indians will return for an answer. Has anyone from our army been among them lately?" He was informed that officers had been through their country leaving beads and tobacco at various points.

When assured of this, he said: "The message is clear. It means that in three days after the full moon the Indians will come to treat with us for beads and tobacco." As the moon was, full on that day, Lieutenant Gibbon and a party started at once, and on the third day found the Indians back at the island and made a treaty with them. General Gibbon then produced and showed us there, and later at my own house, the little flag of crane's feathers which he always greatly valued.

He talked at length of a paper by Col. (since Major-Gen.) R. P. Hughes, published in the JOURNAL of the UNITED STATES MILITARY SERVICE INSTITUTION, for January, 1896, in which that author, a brother-in-law of Gen. A. H. Terry, asserts positively, that General Custer brought his own fate upon himself in the Big Horn campaign, by direct disobedience of the orders of General Terry, under whom he was serving, and by not keeping his command in touch with that of the column commanded by General Gibbon. The entire drift of the article is very severe upon General Custer and complimentary to General Gibbon. Notwithstanding this, General Gibbon asserted that he did not think it was altogether fair in that it had not make sufficient allowance for the discretion allowed to General Custer in command of a separate detachment. Moreover, said he, "General Custer is dead and cannot tell his side of the story, or of the motives which influenced his action, which I think ought to prevent us from severely criticising his course."

I replied: "General Gibbon, did you not tell General Custer 'not to be too greedy' when your commands separated on that campaign?" "Yes," said he, "that was because I knew that he was always ready to fight, and felt that he should know that I was ready to help him." The magnanimity of General Gibbon in these comments is only equalled by that shown by the late General Terry, who during his own life, bore ill-deserved criticism rather than to publish his side of the story, lest it reflect upon the dead Custer.

On the night of January 20, 1896, on the invitation of our common friend, Gen. Bradley T. Johnson, of the old Confederate Army, I attended with General Gibbon, a lecture given upon the "Battle of Gettysburg," before a Confederate Society, by William L. Royall, of

Richmond, Va. The speaker attempted to show Longstreet alone responsible for the Confederate defeat in that battle. His entire line of argument and comment was distasteful to General Gibbon, who kept up a running fire of criticism in my ear that was as interesting as amusing. As soldiers of the Second Army Corps, neither of us was disposed to accept, without qualification, the assertion that if Longstreet had acted as promptly as Lee desired, the Army of the Potomac would have been knocked into smithereens at Gettysburg. When Mr. Royall said, "none of the corps of the Army of the Potomac had reached Gettysburg by 7 A. M. on the morning of July 2, 1863," General Gibbon ejaculated, "H——. I had the Second Corps on the field at 6 A. M."

After the lecture, a party of us adjourned to the University Club in Baltimore, where General Gibbon gave us all a very interesting account of the Midnight Council of War held by General Meade on the night of the second day of the Battle of Gettysburg. In this account General Gibbon emphatically denied that General Meade made a single suggestion of utterance indicating that he thought of retreat. In this, he is in direct accord with the statement always made by General Meade himself, and in direct opposition to the assertions made by Mr. Royall. A detailed account of this council of war was written by General Gibbon some years before his death and published in the "Battles and Leaders of the Civil War," published by the Century Co., of New York.

In 1895 General Gibbon was the orator of the day at the re-union of the Society of the Army of the Potomac, at New London, Conn. His oration was of exceeding interest, and at the dinner table the same night he told some excellent stories. One was of his being presented to President Lincoln at an army review, shortly after the Battle of Fredericksburg, where President Lincoln took his hand and said, "Are you the author of the 'Decline and Fall of the Roman Empire?'" General Gibbon was the youngest general officer present and blushed so deeply at this that Mr. Lincoln kindly added, "Never mind, General, if you will only help me write the history of the decline and fall of the American Rebellion, I will be satisfied."

General Gibbon was always fond of Baltimore, where he had married his wife, and whither he was brought severely wounded after the Battle of Gettysburg. He spent the last winter of his life in that city, and was frequently at the University Club in which he was most popular, and where he delivered a lecture upon his Indian campaigns only a few weeks before his death. After a political revolution in Maryland, his name had been suggested as one of the police commissioners of Baltimore. Personally anxious for his appointment, I consulted him, when he replied that he would never seek the office but would accept it if tendered, and if appointed would do his best to give Baltimore a model police organization. When questioned concerning his

legal residence and his politics, he replied: "I own a farm in Montgomery County, Md., but have never voted in my life. I have always been a Democrat, but during the war never talked politics as I felt there was but one issue, and that the suppression of the Rebellion."

Although many of his nearest relatives and closest connections were Southern, he was always thoroughly devoted to the Union cause, and as gallant a fighter as we had in the Union Army. He never concealed his sentiments, nor minced matters in discussion; yet among his best friends after the Civil War, were many of the most distinguished of the old Confederate soldiers, such as Gen. John B. Gordon, Bradley T. Johnson and others. After his death the latter wrote of him: "he was a manly, generous, chivalric gentleman. It will be many a day before we look upon his like again."

General Gibbon, at the time of his death, was Commander-in-Chief of the Military Order of the Loyal Legion, and on the Saturday before his death talked to me of the pleasure he anticipated in attending a meeting of the Wisconsin Commandery the next week. He had hoped to start on Monday and I bade him "Good-bye" on Sunday, as I walked home with him from the club, and shook hands with him as we parted. Little did I think that that was the last time I should touch that noble hand; but that night he was taken ill with pneumonia, of which he passed away on the following Thursday.

In the address, which was touching in its sincerity, delivered when the body was buried at Arlington, his old comrade, Major Woodruff, pronounced what is the best obituary of John Gibbon when he said:

"General Gibbon belonged to no church, but he believed in the immortality of the soul, and as he believed so he lived, an honest, pure, upright life, respected and guided by God's commandments and the Golden Rule"





THE VON LÖBELL ANNUAL REPORTS ON THE CHANGES AND PROGRESS IN MILITARY MATTERS IN 1903.

PRICED FROM THE GERMAN, BY LIEUT.-COL. E. GUNTER, F. S. C., LATE EAST LANCASHIRE REGT.

(*Journal Royal U. S. Institution, London.*)

II.—TACTICS OF INFANTRY AND OF THE COMBINED ARMS IN 1903.*

THE EXPERIENCES OF THE SOUTH AFRICAN WAR.—The Report repeats much that has been said before on this subject, and draws attention to the well-known publication by the German General Staff—"Episodes of History. Experiences of War beyond Europe. Colenso, Magersfontein, etc."—of which the conclusions, it says, confirm those arrived at in the Von Löbell Reports for 1902. As a *précis* of this publication was given in the *Journal* for May, 1904, p. 586, it need not be further alluded to here, for the report emphasizes many points dwelt on in it, especially as regards our fear of incurring losses which were therein dwelt with, and the want of resolution in not attempting to carry by night, positions assailed in vain by day, etc. Experiments were made in January, 1903, with troops dressed in different colored uniforms, and it was observed that on the whole khaki and gray-green were the least conspicuous. Troops lying down with knapsacks on were much more so than without.

"On the whole," it says, "we may look with equanimity on the South African experience. The conviction is being arrived at that the principles of the German Training Regulations, properly understood and applied, would have undoubtedly conquered the Boers. Nothing is more fatal than to inculcate the *impossibility* of frontal attack in the open as an unconditional principle. Now more than ever does the personal element assert itself side by side with fire effect."

*This portion from the pen of the well-known writer, Major Balck, German General Staff, is of especial interest.

INFANTRY.

GERMANY.—In the new (third) edition of Major Balck's *Tactics*, Vol. I, the latest regulations for training of the chief European armies are given, and the experiences of the Boer War summarized.

The "Tactical Problems," of General Reisner von Lichtenstern, which appeared in the *Jahrbücher*, dealt with the psychology of the battle-field. Col. von der Goltz, has in his "Training for Battle," shown how drill and education can be adapted to this end.

FRANCE.—A memorandum issued by the third section of the French General Staff shows the views taken of the state of infantry tactics. This bears an impress of the present ideas promulgated by General Kessler in 1902.*

It states that, taught by the experiences of the Boer War, the British infantry attack was revised by Lord Roberts in 1902. It does not, however, solve the problem of how to pass over the death zone extending 1000 metres from the defenders' position. Germany seems only now to have learned the lessons assimilated by the French, thirty years ago. In Russia, though its formations have not been altered, the army seems to have clearer ideas than any other of the requirements of modern battle. In Austria they have contented themselves with increasing the breadth of front, and the advance in narrow columns.

Infantry must, says the memorandum, avoid open ground when within effective artillery range, shooting ground and formations which shall conceal their advance. Groups, not unbroken lines, must be formed, which, as long as they can do so under cover, advance uninterruptedly without firing or lateral movement. When it is impossible to continue the advance without firing, this must be opened. To strengthen this, they are then reinforced by other groups until no more rifles can with effect be brought into line. Forward rushes are not to take place on every reinforcement, but only when the defenders appear shaken. Officers and non-commissioned officers choose the fresh positions for their sections, etc., and lead them forward. Open ground is to be crossed by sections, groups or by creeping man by man. The groups, supported by their reserves and eventually strengthened by parts of their second line, gradually gain ground, leaving lateral spaces between them, which are covered by the troops in rear. Thus isolated combats, through which the leader will have obtained a clear idea of the situation, will be fought. He can then support with his reserves those points of attack which seem to have the best chance of penetrating the position, or choose that portion of it against which he will throw his main force. This is to be brought up under cover of the advanced fighting bodies without halting, till it can carry the latter forward to the assault with it. These being the guiding principles of the infantry combat, no subdivision into firing line, supports and reserves is required. Distances will be kept according to the nature of the ground, and the greatest latitude will be left to all leaders. A wider front will be taken up in attack as well as in defence.

These views as to the nature of modern attack are not quite in accordance with the existing "infantry training," so we may expect to see this altered. In the camp at Chalons it was tried, and a reporter of the *France Militaire* says that thin firing lines, with four or

*See the *Journal* (R. U. S. I.) for October, 1903, p. 1156.—E. G.

five metres interval, and *simultaneous* movements of the skirmishers with rapid firing, were the chief characteristics observed, with an unmistakable disinclination to use shelter-trenches.

In the New Field Service Regulations *avant-postes irrégulières* (March "Outposts") are used, with groups of four, six or eight men, called *postes à la Bugeaud* which push forward single or double sentries about fifty paces. These can be used instead of the chain in broken, close ground, or in front of the line of outposts, like the Russian *Sekrety*.*

In marches, much stress is laid on order and discipline. The importance of the careful, individual training of every man in an army is insisted on.

Officers are to take care that men only slightly wounded do not retire out of action, but are attended to as early as possible, and that no fighting men, but only the stretcher-bearers, are used as carriers.

JAPAN.—The infantry training is carried out on German lines (excepting that fours are formed on the French system). Formerly, whereas the restricted parade ground induced an adherence to too close formations, we now see a tendency in the larger practice grounds to over-extension.

The *German Infantry Attack*, a brochure published in the *Militär Wochenblatt*, seems to have been taken as a guide to their training. In this they displayed excellent fire-discipline, and coolness in shooting, with quick powers of observation.

It seemed, however, says the same eye-witness, that there was greater attention paid in attack to the simultaneous advance of the whole line than the utilizing by individual units of the opportunities presenting themselves. There was a decided tendency to the offensive.

RUSSIA.—The "infantry training" of 1900 is still in use. It differs but little from the previous one. "*Jagd Commandos*" (special sharpshooter companies) continue to be trained, though much opposed. It is considered that there are more opportunities now for the employment of especially trained men, who, being good cyclists, judges of distances, etc., are particularly useful in the first line. But as these may not always be available at the critical moment, it is questioned whether their chance employment makes up for depriving the companies of their best men as "specialists." Their marching performances were remarkable.

The *Meldereiter* (mounted messengers) are no longer taken from these special sharpshooters, nor are they to be employed in scouting, but exclusively as orderlies.

GERMANY.—The imperial maneuvers of 1903 took place in the vicinity of Merseburg between the 4th and 11th Corps, with the "A" Cavalry Division attached, and the 12th and 19th Corps, with the "B" Cavalry Division attached. An infantry general commanded the former, and a cavalry general the latter. The cavalry were in greater proportion than usual. On the 11th of September, the German Emperor united the two cavalry divisions and three infantry army corps under his command and led an attack upon a position held by two army corps.

The heavy artillery of a field army has now been assigned its place on the march after experiments as to its being able to keep up with the marching columns. Maneuvers have shown the importance of this

*These do not differ materially from the British group system.—E. G.

arm, not only for the attack on entrenched positions, but also for the encounter battle.* As a rule, it is to follow the main body of the infantry in a column. When the column, however, is marching with a view to an attack upon an entrenched position, it will be as far forward as the commander judges necessary to admit of the timely action of the guns. Bearing in mind the great depth of a battalion† of field howitzers (1100 metres without and 1500 metres with wagons) it is considered as a rule best to treat them as field artillery as regards their place in column of route.

Much has been written in 1903. Two important works issued by Section I of the German General Staff, "Breaking off Actions," and "Success in Battle," were issued. The difficulties of the former have increased, and are only possible when troops remain echeloned in depth. It is especially difficult for the defenders, for on any cessation of their fire the attackers may storm the position. But it is also difficult for the attackers, as any pause in their advance has almost the effect of a retreat, and offers an energetic defender a decided advantage.

Battle situations such as depicted in these studies, however, partake more of the character of "Reconnaissances in Force," which are according to modern views, seldom advisable now unless increased fire-effect or peculiarities of ground exceptionally demand them. The increased number of guns brought into action now and their greater effect may seem to favor it, but as now the fire-effect of thick swarms of skirmishers is also much greater, it is difficult to break off this when forces are engaged at medium distance.

It is an essential condition to success in battle that it must be arranged beforehand to bring the main strength to bear on the enemy's weakest points—that is, his flanks. In battles, on a great scale, however, once the commander of an army has engaged his army corps he can no longer influence the battle. The issue lies with his subordinates and his troops. It depends on the prudent energy of the former and the capabilities of the latter. The leading idea of the volume is that none of the great commanders always acted in the same method.‡

Lieutenant-Colonel Kreuzinger's "Problems of War," which are based on a philosophical study of Frederick the Great's and Napoleon's victories, are mentioned, also Colonel Hanschid's "Applied Tactics," and a "Collection of Tactical Exercises and Their Solution," by Captain Hoppenstedt (Mittler). The third and fourth volumes of Major Balck's exhaustive "Taktik," third edition (Eisenschmidt), are quoted.

FRANCE.—General Langlois and General de Négrier, both members of the Supreme Council of War.§ and Inspectors-General of troops have expressed their different views in regard to battle tactics. Last year¶ we drew attention to the opinions of General de Négrier and of General Kessler, which favor long, thin firing lines, small columns working forward together, combination of frontal and flank attacks, dismounted action of cavalry, etc. Opposed to his are General Lang-

*The present Russo-Japanese War has demonstrated more than ever the great tactical importance of heavy artillery.—E.G.

†A battalion of Fuss-Artillerie is from four to six companies strong.—E.G.

‡The Duke of Wellington's well-known dictum as to this will be remembered.—E.G.

§General Langlois has retired since the above was published.—E.G.

¶See the *Journal* (R. U. S. I.), October, 1903, p. 1134.—E.G.

lois' ideas, with which General Brugère is in accord, as is also General Bonnal. His views are briefly:—

1. Frontal attack is more difficult. Hence wider extension and necessity for a higher moral and intellectual training of the soldier.

2. Improved small arms favor enveloping flank attacks, which necessitate greater maneuvering power.

3. Improved artillery fire favors frontal as well as flank attack.

4. As extension becomes greater, so much the more must the decision be sought or in powerful concentration against one portion of the front.

General Langlois therefore considers the German Emperor's plan of breaking through at one point with heavy cavalry masses as by no means a parade maneuver merely calculated to raise the spirits of his cavalry, but a well-thought-out and practicable plan of action.

5. The defence must be conducted more by depth than by breadth as few troops being shown as possible at first, the bulk being kept in hand to fall on the attacker when he is exhausted by his long advance under fire. To this end, mixed detachments are to be pushed forward by the defenders to withdraw slowly fighting and leading the attacker into the snare prepared for him of a powerful artillery position covered and concealed by a few weak skirmishers only.

He considers the value of the more permanent works to have diminished, and that of field works to have increased, the latter being in the form of shelter-trenches many lines deep.

To sum up the Langlois proposals, they may be said to be the application of the Napoleonic mass principles modified according to the requirements of modern war. He rightly rejects the idea that the tactical surrounding is the only possible method of attack. He believes, relying on the experience of Plevna, that frontal attack is still possible, though difficult. He does not consider it sound to look on the experience of the Boer War as proving the contrary. He agrees with General de Négrier in the difficulty of thorough reconnaissance, and thinks this may be overcome by pushing forward mixed detachments, while de Négrier, advocates the use of mounted infantry only. Both agree in the necessity for the thorough co-operation of infantry and artillery.

But, after all, the main difference in their views is that de Négrier upholds the necessity of the tactical surrounding, whereas Langlois advocates massing to break through at some point of the enemy's line.

RUSSIA.—A strongly developed tendency to the attack is remarked on by all reporters,* but this apparently culminated in a number of partial engagements often lacking in unity of action.

The attack of the Russian Army is essentially a normal one—that is, each army corps attacks precisely as the others do. The firing line, at the outset weak, is continually reinforced. The advance is by rushes by strong detachments moving on a broad front. The nearest reserves are kept rather far back in open order, but the great reserves advance in strong columns, keeping step, more often with bands playing into action even under heavy artillery fire.

The cavalry were given plenty to do, as the two sides were 200 kilometres apart (125 miles). The umpires had to see that the infantry carried their packs full, and that the squadrons took the prescribed number of horses with them and did not leave them behind on any pretence. The cavalry division of the guards particularly dis-

*This does not seem hitherto to have maintained itself in the Russo-Japanese War.—E. G.

tinguished itself, making a night march along bad roads, and overwhelmed a regiment that had pushed forward in fancied security to occupy Pekow. The cavalry, with its accompanying horse artillery, often fell upon the flanks of the hostile marching columns.

The train was reorganized in 1903. Part of the long division provision trains have been now kept back and united in an additional corps provision train. On the other hand, all the three-horsed divisional train wagons have been changed into two-horsed wagons, reducing the weight carried by each to 458 kilos (8¾ cwt.). This increases the number of vehicles from 168 to 210.*

Each body of troops has its regimental transport. The divisions have a divisional train; each corps (including the cavalry corps) a corps train. The provision train of a division is in five sections, that of a corps in four sections.†

THE IMPERIAL MANEUVERS took place near Pekow, under the Grand Duke Vladimir. Special mixed detachments were much used to lay ambushes, carry out attacks on convoys, trains, depots, etc., to break up roads, destroy bridges, etc., on the enemy's line of march; in fact, to play the part of guerillas with all their energies. These detachments were to be quite independent of the bodies of troops from which they were detached, but, while seizing of their own initiative under their own leaders, every opportunity of harrassing the enemy within their *rayon*, they were to keep their own side informed as to his whereabouts.

CAVALRY TACTICS.

GENERAL.—In general the conviction is making its way that cavalry has gained in importance rather than lost by the improvements in modern arms of precision. Even in England, where, owing to the value of dismounted action being over-rated, cavalry is only employed tactically as mounted infantry; Lord Roberts is careful to try and obtain the best officers for the cavalry arm on account of the great intellectual as well as bodily demands which in the present day reconnaissance makes on it. Theoretically, the cavalry of all European armies sets a higher value on dismounted action than before the South African War. Practically, this has only been carried out on a large scale in England, France and Russia; in Austria-Hungary rather less so, and in Italy and Germany at their great maneuvers very little.

First, the British cavalry lost the lance, received the infantry long rifle as their chief weapon, and actually rode to the autumn maneuver of 1903 without swords.

In France the greatest stress is laid on fire action on foot; but the use of *l'arme blanche* where feasible, is not rejected.

These two are the only countries which have thought the improvements in firearms necessitate radical changes of tactical formations when within effective hostile range.

In Germany, Generals v. Pelet-Narbonne and v. Bernhardt declare a more thorough training in the shooting of cavalry even in large bodies, necessary. In all countries attempts are being made, by attaching to them machine guns, mounted infantry, and cyclist companies, to increase the fire power of bodies of cavalry.

By improvements in cavalry rifle training, by better weapons and by increased ammunition supply, they hope to enable dismounted

*For details see *Militär Wochenblatt* No. 136, and *Internationale Revue*, January, 1904.

†For details, see *Sireffleur*, December, 1903, and *Internationale Revue*, No. 431.

cavalry to carry on a prolonged fight, either offensive or defensive, against infantry. This is delusive. The withdrawal of the horse-holders and their escort and of the mounted scouts, reduces to a small number the rifles that can actually be brought to bear even by a whole cavalry division, so that no great effect could be produced on the flanks even of modern armies where reserves would be certainly echeloned. In scouting, outpost service, and in detached fighting, cavalry may often act dismounted with advantage. Even in battle it may be better in certain cases to let them make use of their carbines than to await inactive behind a hill that opportunity for attack which has so often been missed. *Cavalry will never obtain great successes with their rifles*, but only when mounted, by utilizing their great speed and their opportunities for surprise. If von Bredow's cavalry had possessed at Mars-la-Tour a long-ranging rifle, and had dismounted to fire, they would scarcely have stopped a single infantry regiment; whereas, by their so-called death-ride, they stopped the advance of an army corps. As regards losses, it has been stated that at Eylau and Esslingen, Napoleon's reserve cavalry corps lost more than the whole of the German cavalry in eight months of the War of 1870-71.

Every victory in which the cavalry takes no part, every defeat which the cavalry does not sacrifice itself to avert, must be looked on as a reproach to the cavalry of any army.

For the battle, cavalry masses must be carried forward to threaten the enemy's flank far in advance of their own flanks. This will enable large bodies of artillery to get round to concentrate their fire on the enemy's flank. In 1870-71 there was often no room for the batteries to deploy in front. Owing to the general increase of the artillery, this will now more than ever be the case; their obvious employment against the flanks is indicated.

Their effect against the hostile reserves and in enfilading their lines of batteries will be much greater than that of frontal fire against shield-protected guns. Co-operating with them, the cavalry will work round the enemy's flanks and protect their own.

The writer reaffirms his predilection in favor of the lance, and says: The following powers arm their cavalry with the lance:

Germany.—The whole of the cavalry, except the mounted rifles, are armed with hollow steel lances 11½ feet long.*

France.—Both ranks in seventeen dragoon regiments of the eight cavalry divisions and some of the other dragoons carry bamboo lances 10½ feet long.

Italy.—The first ten cavalry regiments carry hollow steel lances 9½ feet long.

Russia.—The front ranks of the Don, Oranberg, and Ural Cossacks carry lances of lancewood.

Belgium has four lancer regiments.

Turkey.—The thirteen regiments of Kurd Irregular Cavalry and many of the Indian native cavalry regiments carry them.

England.—The report gives in brief the memorandum of Lord Roberts which accompanied the order to arm all the British cavalry with the long rifle, but says that numerous advocates of the retention of the lance have written to the *Times*, etc., letters urging this, and among them Lieutenant-General Wilkinson. It reports that the sword is still to be carried for the *mêlée*, but that the greatest weight

*These appear to be much heavier than the bamboo lances.—E. G.

is laid upon shooting and dismounted action, which—and especially on rapid dismounting—the cavalry of high-lows and putties favor. The report draws attention to the efforts to abolish excessive luxury in the cavalry, and to the order allowing officers to use horses from the ranks.

AUSTRIA-HUNGARY.—In Austria great attention is being paid to the shooting of cavalry and to reconnaissance, in which the militia cavalry are trained very thoroughly each year. Long distances are marched, patrols sent out in full strength, detached, and contact squadrons practiced, etc.

A short account of the cavalry work in South Hungary and a more detailed one of the great cavalry maneuvers in East Galicia, near Komarno, with a good sketch-map.

The general impression of the Austrian cavalry was very favorable. The horses were fresh and in good working condition, the officers well mounted, the marches were regularly executed and in good time; the jumping was good. To one militia cavalry regiment only was exception taken as regards horsemanship and horsemastership. The reserve of horses system has worked well. There are now 26,000 trained horses used for training the militia cavalry. Machine-gun detachments took part in the cavalry maneuvers.

FRANCE.—An account is given (taken from the *Militär-Wochenblatt*) of the autumn cavalry maneuvers held under General Poulléau near Réthel, on the Aisne. The 4th and 5th Cavalry Divisions with engineers on bicycles, and the 2d and 6th Cavalry Brigade, one bicycle company, one section machine guns, and the 84th Infantry Brigade took part in these. The cavalry did not use much dismounted action, but attacked on horseback, and their general condition, riding etc., were praised; but greater rapidity of movement and better utilization of ground, adaptation of formations to it, etc., were demanded.

GREAT BRITAIN.—The autumn maneuvers of 1903 around Hungerford and on the Berkshire downs are described at some length in the report. The strenuous marching of General French's troops and the *élan* of their successful cavalry charge on the last day are much praised, as also are the quiet way in which all worked by signal, and the dismounted action of the cavalry. The signalling is especially commended.

ITALY.—The Italian Army received its new regulations for field service in 1903, in which the lessons of the Boer War are skilfully handled without exaggerating the advantages of the defensive or depreciating those of the offensive.

Cavalry divisions are to precede the army by one or two days' march in order to give the columns marching on an extended front, time to concentrate. If no cavalry division is available, then each column is to send forward its own cavalry for reconnaissance. On gaining touch with and reconnoitering the enemy, the cavalry may occupy and hold, dismounted, important points until the arrival of the infantry. The cavalry leader is to be allowed a free hand in action. While the effect of modern improved firearms is taken into account, so also is the moral value of cavalry action, if the right moment is chosen, and rapid decision and bold daring shown in execution.

Light artillery and cyclist companies are attached to the cavalry for pursuit, which is to be active and relentless.

Royal maneuvers were held in Italy in 1903 for the first time since

1899. Two armies assembled in the neighborhood of Venice. A northern army of five army corps (red) with a cavalry brigade and some Alpine troops, against a southern army (blue), which had three army corps, a cavalry division, and some Alpine troops. This cavalry division consisted of one lancer brigade and one light cavalry brigade (each of two regiments), two batteries of horse artillery, engineers, signallers, etc. Each cavalry regiment had twenty-four messenger pigeons with it. A small proportion of the latter reached home and were useful, their messages being at once telegraphed to their destination.

The work of the cavalry throughout is much praised.

FIELD ARTILLERY TACTICS.

GENERAL.—The expectation that the year 1903 would see all the principal European armies rearmed with modern artillery has been but partially fulfilled. In certain States, especially in *Germany*, the results of experiments which shall enable them to adopt a gun, etc., fulfilling every possible demand, are awaited.

Only France has changed the tactical principles of artillery action in the light in accordance with the possibilities of its new weapons.

The shield question is still being discussed; but the barrel-recoiling q. f. field gun seems to have established itself.

The report enters into a detailed defence of German light field howitzers,* which we have not space to reproduce. It says they are necessary to reach troops behind cover, enlarges upon the moral effect of their curved fire,† and says that the bugbear of the impossibility of carrying sufficient ammunition is a myth. It was found impracticable to rest content with one field gun for all purposes. The report therefore advocates their retention, and says it is even a question whether they should not form part of the artillery of all infantry divisions. It quotes from General von Hoffbauer's book on field artillery, published in 1903, which is founded upon the experiences of 1870-71, and which does not recommend the reduction of guns from six to four per battery, as the French have done.

FRANCE.—In France, notwithstanding the confidence shown in the 75-mm. (2.95-inch) Q.F. field guns, fears are gradually being expressed that the number of guns now in an army corps are not sufficient to cope with the Germans. *La France Militaire* thinks the number ought to be six guns per 1000 infantry, as in Germany. The question of motor traction for field guns as saving the cost of horses is being considered, and it is thought that, notwithstanding the expense, the number of guns may be gradually increased, as, though the German guns are inferior, there are many more of them, and they may be improved. This agrees with the opinion expressed in our previous reports, that though the number of guns in the batteries may be reduced, the total number in an army corps should not be.

A new issue of "Field Artillery Training" was issued in June, 1903, replacing that of 1901 (provisional).

The composition of the ammunition columns, parks, etc., and their place in the line of march is given.

*Of 1898, calibre 4.1 inch. The batteries are attached to some of the infantry divisions.—E. G.

†The previous reports condemned the British 5-inch howitzers as having produced little effect in the Boer War, but enlarged upon the excellencies of the heavy howitzer (5.9 inch) against entrenched positions.—E. G.

The report gives the various field practices held in 1903 and the criticisms on them, and says there was nothing to remark on as regards the French artillery tactics, at either the army maneuvers or the cavalry maneuvers of 1903.

GREAT BRITAIN.—The report devotes unusual attention to British artillery tactics. It reproduces pages of the artillery part of "combined training." It gives the remarks of Lord Roberts on the choosing of artillery positions at the autumn maneuvers of 1903 in detail, as well as extracts from the report of the Inspector-General of Field Artillery in India for 1902-3.*

RUSSIA.—New field artillery regulations were issued in 1903 as the result of the experiences of those of 1899.

SWITZERLAND.—The report to hand of the Swiss maneuvers held in 1903 show that the batteries were well handled, and, on the whole, worked satisfactorily, the difficulties of the ground being energetically overcome. They were sometimes late coming into action, which is attributable to the *matériel* being somewhat heavy for the ground. Here and there want of proper co-operation with the infantry was observed, and such faults as change of position under heavy fire of superior artillery, etc., were noticeable. It is proposed to reduce the six-gun batteries to four, but with ten ammunition wagons per battery, which are to carry 800 rounds per gun, as will also the corps park ammunition wagons.

A new mountain gun with recoiling barrel was tried, and gave results far more satisfactory than those of the old mountain gun. It proved a very light and handy weapon. It, however, requires four mules instead of three, which sufficed for the old pattern.

*LONDON, Dec. 14.—Commenting on a long special article concerning the condition of the British artillery, *The Times* will say to-morrow:

"The thinking portion of the public will find some cold and tardy consolation in the article we publish to-day upon the rearmament of the artillery. It appears that with good luck we may hope to see the army provided two years hence with artillery fit to oppose that with which other nations are already provided.

"In the meantime, with the exception of eighteen batteries of quick-firing guns hurriedly bought in Germany during the Boer War, the British Army has no guns that would seriously count in modern war.

"Our field artillery would be hopelessly outclassed in range, accuracy, and rapidity of fire, which means simply that our batteries would be knocked to pieces before they could inflict any serious damage on the enemy.

"What is more, our infantry would be compelled to remain on the defensive because the artillery would be powerless to provide the conditions for a successful advance.

"We have again and again pointed out without avail that the Government of this country is carried on without scientific direction, even in those departments most obviously and directly dependent on scientific progress.

"This country follows the procedure of that edible the invertebrate lobster. At intervals the lobster casts its shell, and until a new one grows is absolutely helpless and has to conceal itself in a hole. That is our case, only we have no sheltering hole. We get equipment, usually in a hurry and at an abnormal cost, and then assume that it is the last word of science.

"We take no note of what science is doing until some fine day we discover that our equipment is as worthless for defense as Nelson's wooden walls would be against a modern iron-clad."—*London Times-N. Y. Times.*





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THE HELMET OF HENRI II, SEEN FROM BOTH SIDES. ITS RICH ORNAMENTATION PICTURES THE HEROIC DEEDS OF HERCULES.

ARMOR AND WEAPONS OF THE DE DINO COLLECTION.—II.

BY ISABEL R. WALLACH.

(*The Scientific American.*)

IN a previous article published in these columns,* the more prominent pieces of armor in the admirable De Dino collection, lately acquired by the Metropolitan Museum of Art, New York City, were described and illustrated. It is the purpose of the present brief review to tell something of the more important weapons, which add much to the historical value of that collection, and of some additional suits of armor.

One of the most splendid specimens of these medieval weapons is the Papal sword of Sixtus V, emblazoned with the arms of the haughty Albani. Other blades are here of rare Toledo and Milanese workmanship, showing the wonderful skill attained by the sword-smiths of the period. The wealth of decoration lavished upon blade, hilt and scabbard partakes of the goldsmith's art rather than that of the craftsman in steel. Great two-handed swords may here be found of dimension and temper that bear out the tales told of men cleft in twain at a single stroke.

But of all the knightly swords, the most valuable in the present collection, and the one that appeals strongest to our sympathies, is the magnificent blade of Aben Achmet. Sheath and steel are of rare Hispano-Moorish workmanship, resplendent with enamel and gold and silver filigree. It figured in a tragedy accompanying the fall of the house of Abencerrages and the ruin of Granada. Pathetically near the historic sword lies the elaborately-wrought Koran case of its liege, Boabdil the Unlucky, last of the long line of Moorish kings to reign in Europe. The pole arms of this period are characterized by brutal savagery curiously wedded to exquisite art. The heavy spiked mace, the enormous battle-axes and hammers, the torturing triple-edged pikes, amply justified the iron sheathing in which the warrior incased himself.

A curious and most interesting weapon is an elaborately gilded dagger, made in Germany in the latter half of the sixteenth century, and carrying a pistol concealed within its blade. The removable tip of the dagger forms the key which, inserted in the knob of the hilt, wound the wheel-lock. The latter is visible through the oblong opening at the upper end of the blade. A flint is attached to the under side of the band of *repoussé* that bridges the hilt. This bridge is movable, and, as it descends, it releases the spring that revolves the wheel, brings the flint in contact with the wheel, and sends a shower of sparks into the pistol beneath, discharging its bullet. The weapon is ingeniously contrived, and was no doubt highly prized by its owner.

Unlike the dagger, the Calendar hunting-knife, dated 1540, carries its firearm openly. Its German maker must have been proud of his clever handiwork, for boldly has he made it declare: "ICHENN. HAD . . DISSE . . KOLLENDER . . GEMACHT." (Ichenn made this calendar.)

There is also exhibited a sword-cane once the property of Philip II of Spain. It has a Toledo blade of wonderful temper. Still another

*See J. M. S. I., Nov., 1904.

remarkable piece has a pistol dated 1612, which displays a complete double battery. The mechanism of the ingenious wheel-lock is clearly seen.

The harquebuses and pistols show how far the love of ornamentation was carried. Inlay of pearl and ivory and overlay of gold and silver, *repoussé* and incised work cover the stocks. The metal work of the weapon as well as its wheel-lock, key and powder flask, show treatment akin to that of the goldsmith's art.

Among the smaller weapons are specimens interesting alike for their beauty and ornament, and for the ingenious devices that insure the attainment of their fatal purpose. The early firearms attracted much attention, specially those in which the mechanism of the old-time wheel-lock is visible. Prototypes crude and curious, are here displayed of our modern rifle and double-barreled gun.

The finest specimen in the De Dino collection, so far as weapons are concerned, and, indeed, the finest specimen of its kind in the world, is a sword fashioned during the reign of Francis I. The hilt is wound with braided gold wire of extreme fineness and ends in the bust of a woman, the modeling and carving of which are perfect. Similar busts terminate the cross-bar, and a coiled serpent guards the end.

The exhibit of the helmets in the collection is likewise most comprehensive. Those who have read the previous article will recall the many types there illustrated. It may be fitting in this place, however, to call attention to the royal burginet of Henri II of France. Its sides tell in rich relief of the victory of Hercules. The casque forms part of the gilded armor he wore when as Dauphin he visited his royal father, Emperor Charles, confined a prisoner of war in Madrid.

In the previous article some splendid specimens of armor in the collection were illustrated and described. Moving from case to case of the collection, one cannot help noting how fashion changed in these steel garments, even as it does in ordinary dress to-day. The earliest suits show shoes ending in a cruel spike, with other spikes projecting from the arm pieces. A swift thrust from a foot or elbow thus armed was likely to leave an indelible mark. Later the square-toed shoe, supple and flexible, by reason of its many plates, came into favor. It is to be seen in the royal suit of Philip II of Spain, of blood memory in England and the Netherlands. Over the heart is the cross of Calatrava and d'Alcantara. It is hard to reconcile the meaning of this symbol with the ruthless persecution its wearer instituted in the Protestant lands he sought to conquer. A large portion of this richly-decorated suit, as stated by Baron de Cosson, formed a part of the collection of the Madrid *Armeria Real*. From this armory nine pieces of this suit were abstracted in 1839. The backplate, the breastplate (with its dependent pieces), footplate, and the defence of one forearm are added from a similar suit. The latter pieces formed part of the harness, of which parts are still preserved in the Madrid *Armeria*, which appears to have belonged to a member of the family of d'Onata. The suit was made in Germany about 1554.

Still another suit belonging to Philip II is also displayed. Philip II was painted in this second armor by Titian and Rubens. A century later, Velasquez used it in his portrait of Count Benavente, now in the Prado Gallery in Madrid. This armor was fashioned by a German artist about 1550. The numerous pieces of richly-decorated armor in the particular case containing the suit and in a neighboring case formed a complete panoply of which the parts could be changed ac-

according to the needs of its wearer. In the specimen illustrated, the tournament plates that reinforce the armor of the shoulder and face are added. The suit was probably made by Colman of Augsburg. The sword hilt in the left hand of the armor is of Spanish make, and dates from the middle of the sixteenth century. It is the work of Sohagun el Viejo of Toledo, the swordsmith of Philip II.

A very rare specimen is a florid and flamboyant suit with its grotesque visor mask. The puffing and slashing of the court dress of the day (1530) is imitated in the metal, and the anatomical lines are followed with admirable fidelity, even to the instep and gauntlet. Every vulnerable point is guarded; yet nowhere is the movement of the joint or muscle hampered in the slightest degree. The lightness of the plates indicates that the armor was designed for occasions of ceremony. The human face visor is rare. Baron de Cosson finds evidence regarding this armor (one of the most valuable of the collection) as having been a gift of the Emperor Maximilian to one of the dignitaries of his court. The left hand of the armor holds a Spanish sword made during the sixteenth century.

A remarkable harness is the jousting armor made by a German craftsman about 1500. This is an example of the most specialized form of jousting armor. Its weight is nearly 90 pounds. The helmet, weighing 22 pounds, was bolted to the breastplate, and is of sufficient size to enable the wearer to turn his head. The armpits were protected by large rondelles, and a shield fastened at a single point served as a mark for a lance thrust. The lance of this period was sometimes over 16 feet long (about 4 inches in diameter near the hand), and weighed nearly 40 pounds. It could not, therefore, be held very well, but had to be balanced between a separate "fork," attached to the breastplate, and a long arm riveted to the backplate. Such was the weight of the armor, and the rapidity of the charge, that a lance which struck squarely would be splintered. A barrier separated the jousts, and rendered armor for the legs unnecessary. The headpiece of a horse mounted under the suit illustrated indicates that the horses were sometimes blindfolded to prevent their shying.

MILITARY PRIZE ESSAYS—A SUGGESTION.

BY "A SUBALTERN IN CENTRAL AFRICA."

(*"The United Service Magazine," London.*)

WHEN discussing the art of war a great military writer has said: "Experience is of little value without reflection, and leisure has its advantages." The importance of these words and how much they mean should be especially noticeable to the present generation of officers. We live in an age of autobiographies and biographies, and not a few of these works deal with the lives of eminent soldiers both past and present. Through many of the volumes there runs a similar vein, a vein of industrious and intellectual military reading. So forcibly is this presented that the reader is almost led to believe that success is attained by pure study. The assumption is an exaggeration, but that it is the backbone of all true advancement there can be no denying.

Napoleon's maxim, and the best known of all, is to "peruse again and again the campaigns of Alexander, Hannibal, Cæsar," etc. To-day there should be no deviation from this rule.

The voice of public opinion to-day, educated by certain sections of the press and stimulated by reverses in South Africa, is inclined to credit the theory that the intellectual capacity of both officers and men is insufficient and below the average. To put forward ever so strong a plea that such is not the case is only to encounter either uncertain belief or flat contradiction. Yet there are many proofs that great numbers of officers and many even of the rank and file, now show a particularly keen interest in the past military history of their profession. There are numerous officers to-day who follow the great French captain's motto, but to whom gaining publicity for their knowledge affords no attraction. Amongst the rank and file the tendency to read military volumes is made sufficiently evident by referring to the libraries at Aldershot and other such military centers. Here, the absorbing tales told by Napier, Kinglake and other such masters are eagerly seized upon, as well as a variety of works of a less ambitious character. It is then because the material is there and gradually developing, that the following suggestion is here put forward. It is briefly as follows:

1. In order that the study of military history may be encouraged in the regular forces, a literary prize in the form of books or money is suggested. The books to be of more value in proportion. The prize to be offered to officers and men.

2. A separate prize or competition to be offered in each of the administrative districts of the new *régime*, under the control of a committee.

3. This committee or board would make a selection of—say five—military works, and each competitor would be permitted to choose one of these from which to write his essay. Each candidate when forwarding his name for competition, would notify the title of his selected work, and write an essay on that work, as set by the committee. Thus the committee of each administrative district would set five essays.

4. In order that a much higher standard may be exacted from the commissioned than from the non-commissioned ranks, there would of necessity be two boards. The officers' board should choose standard works replete with interest; while the committee supervising the rank and file should make their selections from writers less advanced, yet at the same time equally capable of exciting intelligent interest.

5. In order that there may be fair competition, captains must not compete upon even terms with subalterns, nor must warrant officers engage with raw recruits. The following division is then suggested: For the commissioned ranks, from captains upward, the same essay may be set as that for the rank of subaltern, but should be much more severely marked. There should, moreover, be no objection to a subaltern competing with his senior officers if his work is considered good enough. I mean by this that his work would in such a case be marked on the higher standard.

6. In the division for the rank and file thus:—

- (a) In one group warrant officers and sergeants.

- (b) In the second group corporals and other ranks.

As in the commissioned ranks, a higher standard should be marked in group (a); and similarly, there should be no obstacle to a candidate of group (b) competing with those in (a).

In connection with the non-commissioned ranks, a man's defaulter sheet, unless quite exceptionally bad, should not be a barrier to his competing—interest in an essay might prove the starting-point of reformation.

To-day very many works are read relating to the lives of eminent soldiers, which not only excite an absorbing interest in the tale itself, but are also especially beneficial owing to the good influences that pervade the whole. It would be easy to mention several works of military biography that have exercised a marked effect upon the careers of many British officers and men.

The plan here given is presented merely in a skeleton form, but if a fair trial falls to its lot, success should eventually attend it; and to those who now shrink from a public competition, the opportunity thus offered may present a fair field for the exercise of an ambition hitherto lying dormant. It is to be hoped that the interest created may be widespread. We possess an empire which holds sway over civilization and over barbarism, over densely and over sparsely populated countries; and through its length and breadth troops are sent to climates equable and pleasant, or variable and disagreeable. In not a few stations, more especially in the African Protectorates, an officer must support, as best he can, long struggles with solitude and loss of all civilizing influences. For months he is cut off from any intercourse with white men, and his companions are his books, which, of course, are read, and re-read, and read again. Obviously, if any reasonable incentive were offered, the study of military works would be encouraged, and the character of the contents of many bookshelves would be changed.

A T R E A T I S E O F

Military Discipline :

In which is Laid down and Explained

The Duty of the Officer and Soldier,

Through the several Branches of the Service.

By **HUMPHREY BLAND, Esq.**
Lieutenant-General of His Majesty's Forces.

THE NINTH EDITION, Revised, Corrected, and Altered to
the present Practice of the Army.

*As omni Parvis non tem Multitudo est Virtus indetta, quam Ar: et
Exercitium joint proutque Vallant.* Vegetius, Lib. 1.



L O N D O N :

Printed for R. BALDWIN, J. RICHARDSON, T. LONGMAN, S. CARM-
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1765.



Comment and Criticism.

"A Second West Point."

Major E. E. Hardin, 7th Infantry.

I was very much interested in reading Colonel Tillman's ideas concerning the future of the Military Academy, in view of the possible increase in the number of cadets. It may well happen that the number of cadets will be larger than can be profitably instructed in one school and a division of the classes may become necessary, and I think Colonel Tillman's idea is the correct one.

It has been suggested that at the end of the second year the cadets who by inclination or special qualities show themselves fitted for the artillery, ordnance or engineers, rather than for the more military courses, the infantry and cavalry, should be retained at West Point, while the others are sent to some other place. I think those intended for the infantry and the cavalry should be kept at West Point and the others sent away and my reasons for this are: There never has been a time when any cadet was taught too much for his own future good; it makes no difference whether in after life we are called upon to use our mathematics or not, we have to use our minds, and all we learned at West Point helps us to do that and the present course would need little, if any, modification to make it entirely suitable for officers of infantry and cavalry.

It may well be that the future officers of artillery, ordnance and engineers need a more advanced course than that now given at West Point, and they can best get it at another school. On the other hand, the only just criticism that I know of that can be made on the West Point education of officers for the infantry and cavalry, is that they do not know when they graduate, anything about commanding men, and

have little sense of responsibility, many of them having practically done four years duty as privates, and having exercised no authority or responsibility.

In my judgment, the main and principal necessity for a line officer is to know how to handle his men and keep them in the proper spirit and how to hold them together and to himself. This knowledge is much more important to officers of the infantry and cavalry than to other officers, on account of the company and regimental organizations, and the necessity of making those organizations real live bodies capable of working together. Therefore, the cadets intended for the infantry and cavalry should be kept at West Point where the great body of cadets will be, and the first class should hold all the officers, both officers and non-commissioned officers. If there are enough in the class to furnish all the officers and non-commissioned officers, no one outside the first class should wear chevrons.

The cadets should be divided, as now, into companies, and these should be divided into platoons, sections and squads, each with its own permanent personnel and leader, and each company commander and each chief of platoon, section and squad, should be held responsible for the discipline, equipment and as far as possible for the military instruction of his immediate command, to the next higher officer over him. Any member of the first class guilty of neglect of duty or other conduct, which would reduce him to the ranks, should be turned back to the second class. The idea being that no cadet should be given a commission until he has shown himself at least competent to command a squad. With this organization there could be perfect discipline and discipline would be enforced by the first class. At present, and ever since I have known the academy, the discipline in the companies is bad.

A corporal of the third class and a sergeant of the second class, in the majority of cases, exercises no authority over privates in the classes above him and little over those of his own class; this necessarily must and does result in the feeling, on the part of the privates in classes below the corporals and sergeants, that they do not get just treatment. And the feeling is justly founded and is lasting in its future effect upon the officer. No worse thing can happen to a line officer than to acquire a habit of injustice or to fail to acquire a habit of absolute impartial justice. No amount of ability will make up for one, and an immense number of faults will be counter-balanced by the other.

No company commander on earth would think for a moment of appointing a recruit of one year's service a corporal, when he had men of three years' service who were sure of getting commissions in a year. No man can with equanimity and profit to his own military character, see himself commanded by corporals and sergeants, his juniors in years and experience, and his own inferiors in education and instruction, and no man can perform for four years at West Point, the duty of

a private and not feel that injustice has been done him. An injustice of the foulest sort has been done him and the army. If he is fit to be an officer, he is fit to be a corporal or a sergeant and injustice has been done him that he is not one. Injustice has been done him in that he has not been given the opportunity to exercise some authority and to feel some responsibility. Injustice has been done the army in that it gets an officer who has not received all the education the Military Academy is capable of giving of him. If, on the other hand, the cadet is not fit to be a corporal or sergeant, what words can describe the injustice to him, of starting him on a profession for which he is known to be unfitted, and the injustice to the army of giving them an officer known to be unfitted for the service. Such an officer is bound to disgrace the academy and should not be allowed to graduate.

The so-called hazing would disappear at once, for no first class man would for a moment, allow any member of his squad to be hazed; he would feel that he could enforce discipline in his own squad without any help from outsiders. The hazing idea at West Point, originated in well-meant and effective attempts to discipline new cadets and its abuse has been due to lack of discipline.

To take the officers intended for the infantry and cavalry away from the large body of cadets and dispose of them, the above outlined chance of improvement would be to divide the value of the education and no amount of theoretical instruction at another school would make up for it. To leave the engineers, ordnance and artillery officers to do this work would not be as valuable to them and would take part of the time they could profitably devote to study and theoretical instruction.

The large number of cadets will make it very difficult to secure enough instructors from the army, without very materially reducing its efficiency, and I believe my idea carried out, would enable the number of officers on duty with the cadets, to be largely reduced without any disadvantage to discipline or instruction.

What I have said concerning discipline refers in no way whatever to the discipline of the academy, as administered by the officers on duty there. I make no criticism of the discipline of the academy now or in the past. I refer entirely to the discipline of the cadets in their companies as administered by the cadet officers and non-commissioned officers, and I state only facts known to every graduate.

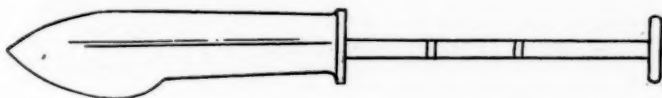
MALAH I ISLAND, LAGUNA DE BAY, P. I.

SEPT. 14, 1904.

"An Intrenching Tool."

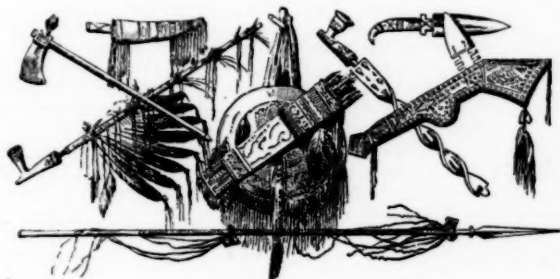
Captain W. L. D. O'Grady, late 88th N. Y. (Irish Brigade).

It has struck me that a light entrenching tool, to be carried immediately behind the fighting line, on muleback or Jap carts, could be something like an exaggerated ink-eraser, with bamboo shaft and cross-handle.



Of course, it could never supersede the more powerful picks, shovels and axes, but for prompt use at the front would serve either for digging or chopping. As a weapon, at a pinch, it would be more formidable than machete, bolo, dah or yataghan. The cross-handle gives a better thrusting power than the ordinary side gripe. Mah-ratta daggers and some old Italian rapiers illustrate this—with an additional length of bamboo, which might serve as a shelter tent pole, it could be used as a pike or as part of *chevaux-de-frise*, after intrenching.

Is not the new rod bayonet somewhat superfluous? At Malvern Hill, that grand old graduate of the 2d Dragoons, General Sumner, saw what the wild Irish could do "wid clubs wot they wor used to." He had been very wroth at the sight of a lot of smashed muskets, but the explanation appeased and pleased him. At Chicago, the cavalry found that carbine butts on rioters' corns were more efficacious than a threatened bayonet charge. Of Rudyard Kipling's modern "Three Musketeers," Learoyd is described by Mulvaney as "a dhirty fighter, he always uses the butt."





Reviews and Exchanges.

Recollections and Letters of General Lee.*

CAPT. ROBERT E. LEE has well performed a work of love and duty in gathering together the private letters of his father Gen. Robert E. Lee, those to his family and intimate friends. They are presented in a handsome volume of some four hundred and fifty pages, containing three portraits of the General at different periods of his life.

As the years pass, his countrymen, North as well as South, of all shades of opinion, will want to know more intimately the man who, more than any other, maintained the Southern Confederacy through all its troubled career. However opinion differed in the South as to the errors, failures or neglects of its public men, there was entire unanimity as to the capability and nobility of General Lee; a perusal of these letters will help to explain why he had and has such a hold upon the affections and confidence of a people who, by their sacrifices, sufferings and final complete failure, would be apt to criticise and condemn those in responsibility.

The letters are mostly of a personal nature and contain only incidental allusions to the war.

J. W. R.

Men and Manners of the Third Republic.†

THE author of this very interesting book, or rather parts of it, for much of it was extracted from his papers and contributions to periodicals after his death, says of himself: "I do not pretend to be a historian, I am only a *causeur*, nothing more." And again: "I was brought up to look upon Republicanism in general, and upon French Republicanism in particular, as the most transparent and most ridiculous of shams."

Of course, one frankly admitting his limitations and prejudices would hardly be expected to say much that was complimentary to

*Recollections and Letters of Gen. Robert E. Lee. By his Son, Capt. R. E. Lee. New York, Doubleday, Page & Co., 1904.

†Men and Manners of the Third Republic. By Albert D. Vandam. New York, J. Pott & Co. London, Chapman Hall Ltd., 1904.

the men and manners of the Third Republic, or of any republic. Yet his criticisms doubtless have much truth for their basis, and probably add much toward a correct view of a very critical period in French history.

Peace immediately after the Fall of Sedan might have brought back Napoleon III, considering that at a much later period Bismarck threatened to restore him. Peace, without the restoration of Napoleon, meant either the restoration of the Bourbons or a republic. Apparently, the descendants of the Bourbons were not equal to the risk of loss of money or property, for no one questioned their bravery.

"The Republicans forget that they overthrew nothing; that in saying they kicked the lifeless body of the Second Empire out of the way, one credits them with too much; they simply stepped over it. The only one who displayed any courage at all was Jules Favre, and he had tested his ground before venturing on it. 'Where is the Emperor, does he communicate with his ministers, does he convey orders to them?' Favre exclaimed, twelve hours before he risked his motion for the deposition of Napoleon III and his dynasty. To all these questions there was only a monosyllabic 'No,' from Count Palikas. 'In that case,' Jules Favre went on, this time addressing the Chamber at large, 'there is no need for me to enter into long developments to make the Chamber understand that the *de facto* government has ceased to exist, and that unless there be wilful blindness and obstinacy, which would cease to be patriotic, the Chamber can only appeal to itself and to the nation for the means of defence of both.'"

Gambetta proclaimed himself the master of France, and France submitted in her dire extremity to the dictatorship. The author, regarding this says: "I have already said Gambetta had not the pluck of a mouse and I shall probably say so again. It is well to insist upon this in view of the English tendency, in many quarters, to accept his fame at the valuation of his successors who have dared to raise a statue to him opposite the parade ground, where the first Napoleon reviewed his sublime, though not unconquerable legions. There is a difference between these two usurpers, in spite of the fact of both having sent thousands of Frenchmen to their doom. There is a difference between the hundred and odd days after the ascent of the balloon from the little square of St. Pierre at Montmartre. There is a difference between the flight of Napoleon in June, 1815, and the flitting of Gambetta from Bordeaux in February, 1871. It is like the fall of a race horse and the fall of a cart horse. Yet this low-bred adventurer, who showed the white feather at the sound of a few pistol shots at Orleans, where he had gone to correct the tactics of Aurelle de Paladines, bullied and browbeat the generals whose shoes he was not fit to clean, and as neither General Bonaparte nor Napoleon I would have thought of doing." The future student of the real and impartial history of the war, which has not yet been written, will never cease to wonder at the submissiveness of all those generals, and at their obedience to the orders of those who had neither regular authority, nor competence to condone their usurpation." All the scandals which have made the Third Republic a by-word among civilization, had their origin in that four months' dictatorship."

The author then proceeds to detail the intriguing and the scandals during the administrations of Thiers, Jules Grévy, and their successors. There must be much inherently good in the French people

to have developed from all this witch's cauldron a republic so capable, and apparently so stable, as that now existing among them.

A very interesting chapter is devoted to the "Spy Mania and the Revanche Idea." The author says: "The story of this institution, there is no other word for it, would fill a big book. To go no further than Richelieu, we find a perfect network of espionage, of which the great Cardinal held the strings. Not only was it cast over the land, but it had its ramifications beyond the frontiers. Mazarin was probably less generous with his rewards to his tools than his predecessors, but he was equally well served by them. La Reynio, Sartines, Berryer, and Fouché, all distinguished themselves as head of the system, and under each it was more or less perfected. In short, there is not a period of French history, from the advent to power of Armand Leander Pleasis to the hour in which these lives are written, in which the spy, no matter under what form or denomination, did not work his evil ways and did not contribute to the lowering of the political as well as moral standard of the government."

"For years not a single foreign spy has been caught in France; while on the other hand, two French ones were caught in Germany, besides an Alsatian woman in Metz. Wilhelm II, commuted the sentence of the former, if I remember rightly, at Carnot's death. Nevertheless, France continues to suffer from the spy mania, and we have seen what it has led to. When a nation has been inflicted with acute spy mania for a number of years, she resorts instinctively to the supposed remedy of counter espionage. Guizot, whose writings were even more well weighed than his verbal utterances, has plainly told us that the road between the spy and the agent procurator is short and easy of descent. It is the most lurid of all the side-lights of the *revanche* idea; so lurid, in fact, as to defy extinguishing, even at the risk of morally swamping military France."

The very recent resignation of General André, the Minister of War, under charges of encouraging spying on military men, draws attention just now to the universality of spying in the French Republic.

J. W. R.

Letters from an American Farmer.*

THE author of this attractive American classic, which has passed through as many editions as Mrs. Grant's "Mémoir of an American Lady," was a native of Normandy. He completed his education in England and came to Canada, where he served in the French Army for two years. After the fall of Quebec and the conquest of Canada, Crèvecoeur removed to Pennsylvania, and in 1764 he became a naturalized citizen of New York. Five years later, after marrying an American wife in Yonkers, he settled on an Ulster County farm, where he lived the peaceful life of many idyllic years, gathering the data for the well-printed octavo volume under notice. In 1779 our author attempted to return to Normandy, but the sudden appearance of a French fleet in New York water, caused Crèvecoeur to be suspected by the British of being a spy, and he was imprisoned for several months. He was then permitted to sail, and on his arrival in London, succeeded in selling his "Letters from an American Farmer," for one hundred and fifty dollars. They were published in 1782, the

* *Letters from an American Farmer*, by J. H. St. John Crèvecoeur, Detroit.—Fox, Duffield & Co., 1904.

year after their author reached his native land. Returning to his adopted country in 1783, Crèvecoeur was appointed French consul in New York, becoming well known to Washington, and an intimate friend of Franklin, accompanying him on various journeys, one of which is recorded in the "Voyage Dans La Haute Pennsylvanie." In 1790 he returned to France, where he died in 1813.

Washington was right when he declared the poet-naturalist's volume would "afford a great deal of profitable and amusive information;" also exhibiting his characteristic prudence by adding that perhaps the picture "though founded on fact, is in some instances embellished with rather too flattering circumstances." A decade later, Charles Lamb wrote to a friend: "Tell Hazlitt not to forget the 'American Farmer.'" He did not, but described it as giving a good idea of "how American scenery and manners may be treated with a lively, poetic interest. The author gives not only the objects, but the feelings of a new country."

We cordially commend this interesting work, with its singularly engaging style, and have no criticism to make of it beyond the expression of our regret, that so valuable a volume should lack an index.

JAS. GRANT WILSON.

With General Grant on the Nile.*

IN January, 1878, General Grant arrived at Alexandria in the United States steamer *Vandalia*. In Egypt, as in almost all countries visited during his memorable tour around the world, he was accorded a royal reception. The Khedive among other courtesies, furnished the General and his party a fine steamer, in which to make the ascent of the Nile. That Grant might have the full pleasure and greatest benefit of the voyage, the Khedive sent one of the conservators of the museum at Cairo to accompany him to translate the hieroglyphics, and give all necessary explanations. Consul Farman, the author of the well printed volume, was also aboard. The book is not written for the learned Egyptologist, but for those who have neither made a special study of the subject, nor had an opportunity of seeing the works of that ancient land, which for centuries have been the admiration and wonder of the world.

Now and then Mr. Farman introduces interesting remarks made by General Grant on subjects not connected with Egypt, as when he said to the consul: "At the beginning of our war in 1861, the two persons that were looked up to by the whole army as the coming men from whom much might be expected, were Generals Charles P. Stone and McClellan; that they undoubtedly had the best military education, and were the two best informed men in that department in the United States. General Stone had been the most unfortunate man he had ever known, but that his misfortunes were no fault of his own. He clearly intimated that in the affair at Ball's Bluff, a large part of the responsibility rested upon McClellan and that Stone was too loyal to his superior officer to publicly place the blame where it belonged, relying upon General McClellan, an old companion in arms, to right the wrong. This he never did."

The value of this interesting volume is greatly enhanced by sixty-five excellent full page illustrations, and a carefully prepared index.

JAS. GRANT WILSON.

*Along the Nile with General Grant. By L. E. Farman, L.L.D.—N. Y. The Grafton Press, 1904.

The Wellington Wind Chart for Rifle Shooting.*

BRITISH riflemen having no wind gauge on their sights must find this handy little chart most convenient, especially those who are so unfortunate as to have to shoot at five or six hundred yards distance for the first time without a coach. The information it contains is surely in most practical form, as a glance at the chart is all that is necessary. More than this, it can lay little claim to originality—perhaps fortunately. The determination of the strength of a breeze by a pennant is familiar, and the other diagram, where the force of the wind is resolved on the face of a clock is an old trick as well. The chart would be more valuable for target practice were the corrections for wind expressed in fractions or divisions of the targets' width, instead of in feet and inches. To adapt it to a wind-gauge sight, the corrections could easily be converted into divisions of the leaf. In any event, though a "fish tail" breeze might well continue to be baffling in spite of the chart, its cost, three pence, is little more than the price of a couple of sighting shots and these might easily be saved in the course of an afternoon, even by the more experienced shots, were one of these wind charts available.

T. H. L.

General Sir Henry Drury Harness, K. C. B., Royal Engineers.†

THIS book is a memoir collected and arranged by the late General Collinson, R. E., and edited by General Webber, C. B., R. E., London, 1903. It contains a series of papers written by various officers who came into intimate contact with him during his eventful life.

The memoir opens with an introduction giving a brief summary of General Harness's life. He was born in 1804 and died at Oxford, February 10, 1883. He passed through the Royal Military Academy at Woolwich, leaving in 1824, and was delayed in obtaining a commission, as there were no vacancies at that time. He went to Mexico as superintendent of a silver mine and returned to England, obtaining his commission in 1827 as Second Lieutenant of the Royal Engineers. He was successively promoted to the various grades, becoming major-general in 1868 and colonel commandant in 1877, and in the same year he retired with the honorary rank of general.

The various distinguished services of this officer are set forth in the succeeding chapters of the book in the form of biography and correspondence, briefly described as follows:

1. Mexico, 1825; Royal Military Academy, 1834 to 1844 and 1852, by General Collinson.
2. Report of the Irish Railway Commission, arbitrator between the Post office and Railway Company, and work as Secretary to the Railway Commission of 1846, by General Hutchinson.
3. The Reform of the Royal Mint, 1850 to 1854, by Gen. J. H. White.
4. Board of Public Works, Ireland, 1854 and 1855, by Gen. Sir R. H. Sankey.
5. The War Office, 1855 and 1856, and Malta, 1856 and 1857, by General Collinson.

**The Wellington Wind Chart for Rifle Shooting.* London. Gale and Polden, 1903.

†*Gen. Sir Henry Drury Harness, K. C. B., Colonel Commandant, R. E.* Edited by Gen. Webber, C. B., R. E. London, 1903.

6. The Suppression of the Indian Mutiny, 1857 to 1860, by General Webber.

7. Education and Organization of the Engineer Service, 1860 to 1862, by General Collinson.

8. Royal Engineers' School, Chatham, 1860 to 1865, by General Collinson.

9. Retirement, 1865 to 1883, by General Collinson.

The book is very readable and instructive and portrays the versatile talents of General Harness. He possessed executive ability and a business discrimination to a remarkable degree. This, added to his capabilities and training as a soldier and engineer, made him at once an important figure in the economic questions of the time far above his actual duties and position.

As General Collinson says in his preface, he possessed a powerful mind and a large heart, and underlying these was a deep religious feeling. The circumstances of his career and his inclination turned him to mathematical and physical problems, but he could readily apply his mind to any of the great questions of the day. His papers were valuable not only for the light they threw on the particular questions dealt with, but for the fine general principles they contained. His face was a tower of strength, and you could feel with him what true loyalty meant. These qualities made him what he himself wished to be—a true soldier. He had also another quality, and that was his deep-seated faith in the government of the world by a divine and beneficent Creator, which influenced his dealings with all men.

During his active life he devoted his whole energies to the uplifting of the army, and especially of the engineer service. While at Woolwich he assisted Captain Denison in starting "The Professional Papers of the Royal Engineers." In 1840 he was instructor at the Royal Engineer School at Chatham; in 1855 he was appointed Deputy Inspector General of Fortifications, and in 1860 Director of the Royal Engineer School at Chatham.

After his retirement he lived for nearly seventeen years at Warting, near Basingstoke, but he was several times called to active service on important missions, viz.: in 1866 on the cattle plague; 1868, Royal Commission on Water Supply of London; 1869, Council of Military Education, and 1876, President of a joint Board of Artillery and Engineer Officers upon Siege Operations. He also devoted considerable time to the theological discussions of the church at that time. His intimate friend to the last was Reverend G. R. Gleig, Chaplain General of the army. His career reflected new glory on the Corps of Royal Engineers, of which he was an honored member.

E. H. S.

General Butterfield.*

THIS special memorial work from *The Grafton Press*, New York, 1904, beautiful in execution, liberal in detail, and breathing the spirit of loyal devotion, is a most interesting addition to the literature of the war period of 1861-5.

Butterfield was a typical product of the civilian life of New York. He had partly educated himself solely from love of the themes in the ordinary duties of a line officer, prior to 1861, at which time he was colonel of the Twelfth Regiment, N. G., N. Y. A graduate of Union College, and the son of a well-to-do and successful business man, he had had special opportunities, which he had not neglected to utilize, and was at this time in his thirtieth year.

Volunteering the services of his regiment at once, the Twelfth sailed in the *Baltic* on April 21, 1861, for Fortress Monroe, within two days after the famous departure of the Seventh Regiment to Washington, promptly filling its ranks with recruits who mostly went in citizens' dress so great was its popularity. The regiment was quickly made efficient, and in June went to West Virginia, Colonel Butterfield being assigned to command the brigade in which was the Twelfth; but the three months of their enrollment expired without any sanguinary experience, although their service was hard and varied.

The directors of the American Express Company, in August, 1861, on the return of the colonel to New York, passed flattering resolutions, and assured him his salary during the war while serving the country.

He had been promoted to a lieutenant-colonelcy, U. S. A. in May, and now he was promoted to brigadier-general, U. S. V. in September, 1861. He took the field under General Fitz John Porter, and went through the Peninsula and second Manassas campaigns.

His energy and fighting qualities were conspicuous in the Peninsula campaign at Hanover Court House, and his popularity was recognized by the gift from the field officers of his brigade of a costly pair of spurs. The address was made by brave Colonel Vincent, who fell at Gettysburg.

The Medal of Honor was awarded to him in September, 1862, for most skilfully resisting the enemy at Gaines' Mills, where, seizing the colors of the Eighty-third Pennsylvania Regiment of his brigade, he lead them into the fight "at a critical moment."

Gen. F. J. Porter said of him: "General Butterfield had no superior as a soldier among the young volunteer commanders who came under my personal notice."

He was made major-general in November, 1862, and given command of the Fifth Corps, but was superseded by Gen. George G. Meade after Fredericksburg.

A letter to the Hon. S. P. Chase, Secretary of Treasury, dated November, 1862, is interesting from its suggestions for the substitution of pack animals in place of a large number of the wagons in a train to facilitate movements and to reduce expense, and shows the thoughtful activity and organizing talent which he had, and during that year he had "taps" changed to suit his ear, and as appears from this record, the now familiar bugle call was revised in that way.

*A Biographical Memorial of General Daniel Butterfield, including many Addresses and Military Writings, edited by Julia Lorillard Butterfield.—N. Y., The Grafton Press, 1904.

In January, 1863, General Butterfield became Chief of Staff to General Hooker.

At this time he originated the distinctive corps badges. He says: "The badges or marks * * * were chosen by me for no reason other than to have some pleasing form or shape easily and quickly distinguishable and capable of aiding in the *esprit de corps*," etc.

His service as Chief of Staff continued after General Meade's appointment as Commander of the Army of the Potomac, and through the Battle of Gettysburg, where he was wounded. He served thereafter under General Hooker at Washington, and in the Army of the Cumberland.

In 1863 was published a manual on "Camp and Outpost Duty," which the general wrote, and which was most highly commended by the military authorities, and widely studied under their direction.

He served during the fall of 1863 in the campaign about Chattanooga, under Hooker, and sought to be assigned to a command. His recommendations and endorsements were most complimentary.

In April, 1864, he was given command of a division of the Twentieth Army Corps, Hooker's, in the Army of the Cumberland. In June he received leave of absence for thirty days on surgeon's certificate, and came to his home on the Hudson.

He had no further service at the front, but remained in the army until after his father's death in 1869; his life during the next thirty-two years was full of business and social activities.

The volume contains a number of addresses given in the course of a happy life, accentuated by the association of his wife, Julia L. James, the widow of his neighbor at Cold Spring, whom he married in London in 1886.

The exceptional ability of General Butterfield in matters relating to transportation and organization must have been his in part by inheritance, for his father was one of the founders of several express companies, from which have grown Adams and the American Express Company. He was an excellent speaker, and his letter to Hooker, dated June, 1864, telling him not to talk too much, is a model of terse English composition; his oration on Honor and Duty, delivered at Union College, in 1892, plainly reveals the high ideals and energetic stamp of the man. He quotes therein from Horace "Who trusts himself shall sway the multitude," and the impression the book leaves is that he was the thought.

The service Gen. James Grant Wilson has rendered to Mrs. Butterfield in compiling the book is gracefully acknowledged by her, and the numerous portraits of the general, the illustrations of the battle monument to his Fifth Corps at Fredericksburg, which he donated, that of the Twelfth Regiment at Gettysburg, the pictures of battle scenes and other objects, greatly enliven this memorial of a loyal American citizen and soldier.

C. E. L.



Journal
of the
Military
Service
Institution

1878

1905

Governor's
Island
N. Y. H.

THE JOURNAL

MARCH-APRIL, 1905



OME of the papers approved for early publication in JOURNAL for the year 1905.

- I. "EXPERIENCES OF OUR ARMY SINCE THE OUTBREAK OF THE WAR WITH SPAIN; WHAT PRACTICAL USE HAS BEEN MADE OF THEM AND HOW MAY THEY BE FURTHER UTILIZED TO IMPROVE ITS FIGHTING EFFICIENCY"—The Prize Essay for 1904 (Gold Medal).
- II. "LINES OF INFORMATION: THEIR DEVELOPMENT AND THEIR VALUE TO STRATEGIC TACTICS."—Read before a General Meeting, Military Service Institution, January 11, 1905, by Brigadier General Adolphus W. Greely, Chief Signal Officer, U. S. A.
- III. "THE SURPRISE OF THE TABOR BRIDGE AT VIENNA BY PRINCE MURAT AND MARSHAL LANNES, NOV. 13, 1805."—From the Original Documents in the Ministère de la Guerre in Paris and the Kriegs-Archiv in Vienna, by Frederic Louis Huidekoper.
- IV. "THE URGENT NEEDS OF OUR COAST DEFENSE"—by Captain Thomas E. Merrill, Artillery Corps.
- V. "FIELD ARTILLERY"—An Historical Resume, by Brigadier General Joseph P. Farley, U. S. A.
- VI. "A STATEMENT OF THE PRESENT NEEDS OF THE COAST ARTILLERY"—by Lieut. George M. Brooke, Artillery Corps.
- VII. "THE ARMY CHAPLAIN: HIS WORK AND WORTH"—by Chaplain C. C. Bateman, U. S. A.
- VIII. "LA FORCE PUBLIQUE DE L'ETAT INDEPENDANT DE CONGO"—par le Captain Harry Madeline. (Belgian Army.)
- IX. "THE CALIBER OF THE REVOLVER" by Major Robert L. Bullard, 28th Infantry.
- X. "PHYSICAL PREPAREDNESS AND THE ORGANIZED MILITIA"—By Captain Nathan S. Jarvis, U. S. A.

THE PUBLICATION COMMITTEE invites contributions of original papers, translations and comments upon current topics. Attention is called to "Gold Medal," "Seaman," "Short Paper," and "Santiago" prizes described elsewhere.

MEMORANDUM.

ANNUAL GENERAL MEETING.

THE Annual General Meeting of the Military Service Institution will be held at Governor's Island, N. Y. H., on Wednesday, January 11, 1905, at 2.30 P.M., for the Election of a President and six members of the Executive Council. Immediately upon the close of the business meeting, Brigadier-General ADOLPHUS W. GREELY, Chief Signal Officer of the Army, will read a paper entitled "*Lines of Information: Their Development and their Value to Strategic Tactics.*"

THE SEAMAN PRIZE.

AT a Stated Meeting of the Executive Council, Dec. 14, 1904, the *Seaman Prize of 1904* (One Hundred Dollars in gold) was awarded to Captain PETER E. TRAUB, 13th U. S. Cavalry, for the best paper on "Military Hygiene: How Best to Enforce its Study in Our Military and Naval Schools, and Promote its Intelligent Practice in our Army."

OUR NEW BADGE.

Referring to the announcement in the JOURNAL MILITARY SERVICE INSTITUTION for September, 1904, of the new (bow-knot) badge, hereafter to be worn by Members and Associate Members, and in order to make the decoration unique, it has been determined to combine with the bow-knot the monogram M. S. I. in gold, detachable in case the ribbon bow-knot is renewed.

Although this change involves additional expense, no increase will be made in the rate already fixed of 25 cents per badge (including one gold monogram) for all entitled to wear it, provided application is received at this office before January 1, 1905. After that date the charge for the complete badge will be 75 cents. The ribbon bow-knots (without monogram) will be furnished for 25 cents apiece.

T. F. RODENBOUGH,
Secretary.

GOVERNOR'S ISLAND, N.Y.H.,
Jan 1, 1905.

The Military Service Institution.

HONORARY MEMBERS.

THE PRESIDENT OF THE UNITED STATES.

Ex-President GROVER CLEVELAND, LL.D.

The SECRETARY OF WAR. The LIEUTENANT-GENERAL.

OFFICERS AND COUNCIL.

President.

Major-General THOMAS H. RUGER, U. S. Army.

Resident Vice-Presidents.

Major-Gen. JAMES F. WADE, U. S. A. Brig.-Gen. JOHN W. BARRIGER, U. S. A.

Secretary.

Brig.-Gen. T. F. RODENBOUGH, U. S. A.

Asst. Secretary.

(Vacancy.)

Treasurer.

Major E. M. WEAVER, ARTILLERY CORPS.

Vice-Treasurer.

Lieut. W. H. JOHNSON, 8th Infantry.

Executive Council.

Term ending 1909.

Major G. S. BINGHAM, Quartermaster's Dept.
Colonel J. E. GREER, Ordnance Dept.
Colonel W. R. LIVERMORE, Corps of Engineers.
Major C. E. LYDECKER, N. G. N. Y.
Major A. MURRAY, Artillery Corps.
Col. C. C. SNIFFIN, Pay Dept.

Term ending 1907.

Bvt. Brig.-Gen. D. APPLETON, N. G. N. Y.
Colonel E. E. BRITTON, N. G. N. Y.
Colonel H. O. S. HEISTAND, Asst. Adjt. Gen.
(Vacancy.)
Lieut. Colonel H. S. TURRILL, Medical Dept.
Major E. M. WEAVER, Artillery Corps.

Term ending 1905.

Finance Committee.

Gen. BARRIGER.
Lieut. Col. DRAYO.

Major D. L. BRAINARD, Subsistence Dept.
Captain F. W. COE, Artillery Corps.
Lieut. Colonel E. E. DRAYO, Subsistence Dept.
Brig. Gen. A. L. MILLS, United States Army.
Colonel F. A. SMITH, Eighth Infantry.
Bvt. Major-Gen. A. S. WEBB, (late) U. S. A.

Library Committee.

(Vacancy.)

Publication Committee.

Gen. BARRIGER, Gen. RODENBOUGH, Col. GREER and Col. SMITH.

MEMBERSHIP AND DUES.

Membership dates from the first day of the calendar year in which the "application" is made, unless such application is made after October 1st, when the membership dates from the first day of the next calendar year.

Initiation fee and dues for first year \$2.50; the same amount annually for five years subsequently. After that two dollars per year. This includes the Journal. Life membership \$50.

NOTE.—Checks and Money Orders should be drawn to order of, and addressed to, "The Treasurer Military Service Institution," Governor's Island, New York City. Yearly dues include Journal.

Please advise promptly of changes of address.



Gold Medal—1905.

First Prize—Gold Medal, \$100 and Life Membership.

Second Prize—Silver Medal, Honorable Mention and \$50.

I.—The following Resolution of Council is published for the information of all concerned:

Resolved, That a Prize of a Gold Medal, together with \$100 and a Certificate of Life Membership, be offered annually by THE MILITARY SERVICE INSTITUTION OF THE UNITED STATES for the best essay on a military topic of current interest, the subject to be selected by the Executive Council, and a Silver Medal and \$50 to the first honorably mentioned essay. Should either prize be awarded more than once to the same person, then for each award after the first, a *Clasp* shall be awarded in place of the medal.

1. Competition to be open to all persons eligible to membership.

2. Each competitor shall send three copies of his essay in a sealed envelope to reach the Secretary *on or before January 1, 1906*. The essay must be strictly anonymous, but the author shall adopt some *nom de plume* and sign the same to the essay, followed by a figure corresponding with the number of pages of MS.; a sealed envelope bearing the *nom de plume* on the outside and enclosing full name and address, should accompany the essay. This envelope to be opened in the presence of the Council after the decision of the Board of Award has been received.

3. The prize shall be awarded upon the recommendation of a Board consisting of three suitable persons chosen by the Executive Council, who will be requested to designate *the essay deemed worthy of the prize*; and also in their order of merit those deserving of honorable mention.

In determining the essay worthy of the prize, the Board will be requested to consider its professional excellence, usefulness and valuable originality, as of the first importance, and its literary merit as of the second importance. Should members of the Board determine that no essay is worthy of the prize, they may designate one or more essays simply as of honorable mention; in either case, they will be requested to designate one essay as first honorable mention. Should the Board deem proper, it may recommend neither prize nor honorable mention. Should it be so desired, the recommendation of individual members will be considered as confidential by the Council.

4. The successful essay shall be published in the Journal of the Institution, and the essays deemed worthy of honorable mention shall be read before the Institution, or published, at the discretion of the Council, which reserves the right to publish any other essay submitted for a prize, omitting marks of competition.

5. Essays must not exceed **ten thousand words**, or **twenty-five pages** of the size and style of the JOURNAL (exclusive of tables), nor contain less than five thousand words.

II.—The Subject selected for the Prize Essay of 1905, is

THE ENLISTED MAN'S CONTRACT WITH THE GOVERNMENT: THE MUTUAL OBLIGATION IT IMPOSES AND HOW ITS VIOLATION MAY BEST BE AVOIDED.

III.—The Board of Award for 1905 will be announced in a later issue of this Journal.

GOVERNOR'S ISLAND, N. Y.,
Jan. 1, 1905.

T. F. RODENBOUGH,
Secretary.



The Seaman Prize.

MAJOR LOUIS L. SEAMAN, M.D., LL.B.
(late Surgeon, 1st U. S. Volunteer Engineers), has founded a prize in the MILITARY SERVICE INSTITUTION OF THE UNITED STATES by contributing annually

One hundred dollars in Gold

for the best Essay, the subject to be named by himself, and to be approved by the Executive Council.

The subject proposed and adopted for the year 1905 is:

**HOW FAR DOES DEMOCRACY AFFECT THE ORGANIZATION AND
DISCIPLINE OF OUR ARMIES, AND HOW CAN ITS INFLUENCE
BE MOST EFFECTUALLY UTILIZED?**

Competition is open to all Officers or ex-Officers of the Army, Navy, Marine Corps, Marine Hospital Service, Volunteers or National Guard.

Three copies of the Papers on the subject must be transmitted to the Secretary of the Institution, to reach his office not later than Nov. 1, 1905. Each Essay must be limited to 15,000 words, exclusive of statistics.

All other conditions will apply as provided for the Annual (Military Service Institution) Gold Medal Prize.

The Board of Award for 1905 will be announced in a later issue of this Journal.

GOVERNOR'S ISLAND, N. Y.,
Jan. 1, 1905.

T. F. RODENBOUGH,
Secretary.

SCIENTIFIC AMERICAN REFERENCE BOOK

12mo; 516 pages; illustrated; 6 colored plates. Price \$1.50, postpaid

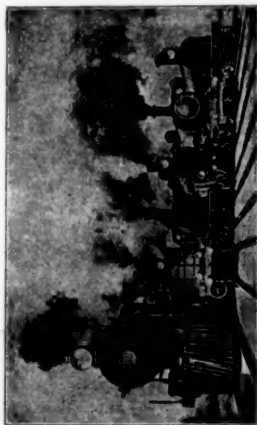


¶ The result of the queries of three generations of readers and correspondents is crystallized in this book, which has been in course of preparation for months. It is indispensable to every family and business man. It deals with matters of interest to everybody. The book contains 50,000 facts, and is much more complete and more exhaustive than anything of the kind which has ever been attempted.

The "Scientific American Reference Book" has been compiled after gauging the known wants of thousands. It has been re-

vised by eminent statisticians. Information has been drawn from over one ton of Government reports alone. It is a book for everyday reference—more useful than an encyclopedia, because you will find what you want in an instant in a more condensed form. The chapter relating to patents, trademarks and copyrights is a thorough one and aims to give inventors proper legal aid. The chapter on manufactures deals with most interesting figures, admirably presented for reference. The chapter dealing with Mechanical Movements contains nearly three hundred illustrations, and they are more reliable than those published in any other book—they are operative. Weights and measures occupy a considerable section of the book, and are indispensable for purposes of reference. Sixty years of experience alone have made it possible for the publishers of the Scientific American to present to the purchasers of this book a remarkable aggregation of information. The very wide range of topics covered in the "Scientific American Reference Book" may be inferred by examining the table of contents on back. The first edition of this work is 10,000 copies. Remit \$1.50, and the book will be promptly mailed. Send to-day.

118 SCIENTIFIC AMERICAN REFERENCE BOOK.



REDUCED FACSIMILE PAGE 118.

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Prizes for Short Papers.

Extract from the Minutes of a Stated Meeting of the Executive Council of the Military Service Institution of the United States, Major General Brooke, V. P., in the Chair, held at Governor's Island, N. Y. H., March 14, 1902.

* * *
Resolved: That the regulations governing the award of Annual Prizes be and they are amended as follows:

Hancock (Infantry) Prize.

The Hancock Prize: \$50, and Certificate of Award; and \$25, and Certificate of Award; to be given for the best and second best original essays or papers, the awards to be made under existing regulations for the Gold Medal, except-



ing that the papers shall contain not less than 2,500 words nor more than 12,000 words, and that but one copy of each paper shall be required from the author; said essays to be critical, descriptive, or suggestive, on subjects directly affecting the Infantry or Foot Service, which have been published in the JOURNAL of the Institution during the twelve months ending March 1 of each year and which have not been contributed in whole or in part to any other association, nor have appeared in print prior to their publication by the Institution, nor have been published in the JOURNAL in any previous year, and excluding essays for which another prize has been awarded. The certificate of award to be signed by the President and Secretary of the Institution and the award to be made upon the recommendation of a committee of three members of the Institution, not members of the Executive Council, two of whom shall be Infantry officers to be appointed, annually, by the President; the award to be made and announced not later than May 1 of each year.

Fry (General) Prize.



The Fry Prize: to be the same as the Hancock Prize and awarded upon the recommendation of a board of three members, not members of the Executive Council, under the same regulations for papers or essays appearing in the JOURNAL during the twelve months ending Sept. 1 of each year, on subjects directly affecting the military service and not otherwise provided for; with the announcement not later than November 1.

Buford (Cavalry) Prize.



The Buford Prize: to be similar to the Hancock Prize, and to be awarded on the recommendation of a board of which two members shall be Cavalry officers, for papers published in the JOURNAL during the twelve months ending May 1 of each year, on subjects directly affecting the Cavalry or Mounted Service; with announcement not later than July 1.

Hunt (Artillery) Prize.



The Hunt Prize: to be similar to the Hancock Prize, and to be awarded on the recommendation of a board of which two members shall be Artillery officers, for papers published in the JOURNAL during the twelve months ending July 1 of each year, on subjects directly affecting the Artillery Service; with announcement not later than September 1.



The Santiago Prize.

THE NATIONAL SOCIETY OF THE ARMY OF SANTIAGO DE CUBA has founded a prize to be known as the "Santiago Prize," by contributing, annually, the sum of

Fifty Dollars

"for the best original article upon matters tending to increase the efficiency of the individual soldier, the squad, company, troop, or battery, published in the Journal of The Military Service Institution of the United States, during the twelve months ending December 1st in each year.

"The award to be made by the Council of the Military Service Institution upon the recommendation of a board of three suitable persons, selected by the President of the National Society of the Army of Santiago de Cuba, who shall report their recommendations on or before January 1st of the following year.

"Conditions to be the same as those prescribed for the Hancock Prize (see notice 'Short Paper Prizes'), Military Service Institution, excepting that the competition shall be limited to officers of the Regular Army or of the National Guard below the grade of major, and that papers shall not be less than 2500, nor more than 5000 words in length."

The names of the gentlemen selected for the Board of 1905 will be announced in a later issue of this Journal.

GOVERNOR'S ISLAND, N. Y.,
January 1, 1905.

T. F. RODENBOUGH,
Secretary M. S. I.

Publisher's Department.

HORLICK'S MALTED MILK.

**For Infants and Invalids, the Aged and Travelers.
A Delicious Food-Drink for Everybody, of all Ages.**

An interesting report has lately been made by an eye-witness of the method of making this delicious food, which has proved so valuable in the hands of the medical profession all over the world as a nutriment for infants as well as an excellent dietetic adjunct to the treatment of typhoid and malarial fevers, etc. The works are located in the richest dairy region of the Northwest, surrounded by fields of growing grain and luxuriant prairies, the water supply being obtained from the celebrated Niagara limestone formation which furnishes so many medicinal springs. The air is always pure and clean, and free from the odors, dirt, and germs of large cities.

Special pains are taken to insure as absolute cleanliness as possible of the cows, barns, milking utensils, and the milkers themselves. The barns are well-lighted and ventilated, provided with cement or stone floors, the walls dazzlingly white, the floors well drained and always clean. Expert veterinary surgeons examine the cows and every detail of the feeding at frequent intervals. Every precaution is carefully devised to prevent the entrance or growth of bacteria.

The barley to be malted is selected with great care, and in the malt houses of the company the most scientific methods are adopted to insure proper growth of the barley and the development of the valuable ferments, diastase and peptase. The wheat used is the best hard wheat of the extreme Northwest, carefully inspected and so prepared that both from the wheat and barley all of the valuable phosphates in their original organic combinations are preserved. The importance of this element in the composition of food is recognized by all.

Finally, in costly apparatus of the latest design, kept scrupulously clean, the large copper receptacles glistening with the sheen of the burnished copper, the extracts of the cereals are prepared, all the extraneous matter separated, and the solution combined with the proper amount of milk and evaporated to dryness. This is done at a very low temperature, so that the milk is not changed in its digestibility, but is preserved in all its pristine freshness.

Still further, by the action of the ferments originally contained in the malt, all of the starch of the barley and wheat is digested, and the proteids contained in the ingredients are rendered far more assimilable than when present in the raw state. Finally, the powdered product is packed in hermetically sealed glass jars, so that no change can take place in the product until it is made to serve as a delicious food for the infant or the invalid.

In another department some of the powdered malted milk is compressed into the celebrated tablets supplied by this firm, containing the same product (with chocolate or thoroughly flavor them), furnishing a confection for growing children far superior to candy, and used very largely by busy professional men as a quick lunch when meal time is interfered with by press of work.

PUBLISHER'S DEPARTMENT.

During the many years of their existence, Horlick's Food Company has received an enormous number of photographs of children raised entirely upon their product from birth until the child was able to take the ordinary table diet, which have come from all parts of the world accompanied with grateful letters from parents and physicians.

At the same time, their records contain many testimonials from physicians who have used Horlick's Malted Milk in typhoid and malarial fevers, bronchial and tuberculous troubles, and whenever an easily assimilated and nutritious food is indicated. Especially noticeable is the large use that has been made of Horlick's Malted Milk in alcoholism, and its increasing use as a topical application in cases of indolent ulcer.

Horlick's Malted Milk is especially valuable in tropical and sub-tropical climates, as offering a pure milk food to the medical profession, so prepared as to be acceptable to the immature stomach of the infant, as well as to the irritated intestinal tract of the fever patient.

* * *

Many of our readers will have noticed the handsome exhibit of the **KEUFFEL & ESSER CO.** New York, in the Palace of Liberal Arts, at the Louisiana Purchase Exposition, which is here illustrated. **KEUFFEL & ESSER CO.** have been awarded the only Grand Prize, Group 19,



Liberal Arts, Instruments of Precision, Philosophical Apparatus, etc., and a Gold Medal, Group 115, Mines and Metallurgy, Instruments and Equipment for Underground Surveying. They furnish instruments and materials to nearly all branches of the army and navy, and their products are probably known to every user of drawing materials and surveying instruments throughout the country, who will agree with the verdict of the International Jury of Awards.

PUBLISHER'S DEPARTMENT.

GRAND PRIZE AND GOLD MEDAL AWARDED THE PRUDENTIAL.

The Prudential Insurance Company of America has received the Grand Prize and a Gold Medal at the St. Louis Exposition for its exhibit illustrating the company's business methods and vast and successful results.

The Prudential and its policyholders are being congratulated on the fact that this award makes The Prudential the most highly honored insurance institution in the world. In the history of life insurance no other company has ever received a corresponding award, although numerous exhibits have been made by insurance companies in the United States and Europe.

The award was granted by a jury of qualified experts, and places the seal of highest approval on what by the common consent of visitors to the Exposition was one of the most interesting and instructive exhibits at the St. Louis Fair.

Such a comprehensive exhibit was possible to The Prudential only by reason of the perfect control which the management of the company exercises over its great organization and the vast details of its business.

* * *

THE GRAND PRIZE ON COCOA AND CHOCOLATE.

Walter Baker & Co., Ltd., the oldest and largest manufacturers of cocoa and chocolate preparations, were awarded the grand prize on all their products exhibited at the World's Fair, St. Louis. They received, in addition, a Gold Medal for the installation of their exhibit. This famous company was established in 1780, and has received forty-three awards from the great international and local expositions held during the last fifty years in this country and in Europe.

* * *

A NEW RE AND DE-CAPPER.

The Ideal Manufacturing Company, New Haven, Conn., are now ready to put on the market a new implement for expelling the old primers from shells that have been fired and reseating new ones. The operation is in a straight line as may be seen by referring to the illustration. The implement may be fastened permanently to a bench or table, in which case it should be located at the right hand, front corner, so that the handle "A" will hang down as shown in the illustration; or it may be fastened to a piece of board attached to a work bench, said piece of board projecting about four inches beyond the front edge of the bench. The forward portion of the block should be cut out between the extractor holder "J" and the head "K", so that the old expelled primers may drop into a receptacle underneath. The cut shows operation of expelling the old primer "E" just completed; the lever "A" is then down and expelling pin is seen as having passed through the fire hole in the pocket of the shell "G," which is shown as half cut away. The cap extractor "F" is pivoted to the extractor holder "J," the joint pin showing near that letter. To complete the operation of recapping, knock off the old primer "E," drop a new one in slot "D," and raise the lever "A" which is attached to two parallel links (only one of which is shown as "B"). The other ends of these links "B" are pivoted to the shell holder "I" in which is slot "H," into which the head of the shell "G" drops, the body of the shell near the head resting in a semicircular seat. This seat, together with the decapper "F," holds the shell in perfect alignment with punch "C," which

PUBLISHER'S DEPARTMENT.

passes through holes on each side of the slot "D," forcing a new primer in the pocket of the shell perfectly true, without tipping. When the lever "A" is raised the links "B" draw the shell holder "I" together with the shell "G," up to the punch "C." When the primer is seated the cap extractor "F" is raised and the primed shell is removed, another shell is placed and the operations repeated.

The implement is equally good as a hand tool. The lever "A" folds over so that the tool may be carried in the pocket. It weighs but eight ounces. It is strong and powerful. It seats the primers easily and positively to the bottom of the pocket, which prevents misfire. It ejects the old primer and



seats a new one without removing the shell, which is handled but once to perform the two operations, thus enabling the operator to do nearly twice as much work in a given time, which is valuable where quantities are required, as in Military Armories. The use of this implement in armories where loading presses are used, will enable two operators to work at one and the same time, as the loading press may then be kept at the heavier work all of the time. The following sizes are now ready: 25/35, 25/36, 30/30, 30/40 Krag, 30/45 Springfield, (headless), 32/40, 38/55.

* * *

A FAMOUS SEED HOUSE.

An instance of commercial development and growth to proportions unusual is cited in the career of the well-known seed firm, D. M. Ferry & Co., of Detroit, Mich. Since its establishment, half a century ago, the company, following out principles of strict business integrity and building upon unquestionable merit, has steadily grown until the name of Ferry's Seeds is now a household word with every planter in the land.

Ferry's Seeds are famous for their purity, freshness and reliability. The greatest of care is exercised in their growing and selection, and only seeds of the highest possible standard are placed upon the market. Every package has behind it the reputation of a house whose standards are the highest in the trade. A fresh stock, just received from the growers, is carried by dealers everywhere.

All farmers and gardeners ought to have a copy of the 1905 Seed Annual of the Ferry Company. It contains information and suggestions that are invaluable. The Annual will be mailed free to anyone addressing D. M. Ferry & Co., Detroit, Mich.